616109

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees.

Vol. XLVII. CHICAGO, ILLINOIS, AUGUST 25, 1906. No. 8.

Addresses

CERTAIN PHASES OF RECENT WORK IN PATHOLOGY AND PHYSIOLOGY.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON PATHOLOGY AND PHYSIOLOGY AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, JUNE 5-8, 1906.

HENRY A. CHRISTIAN.
BOSTON.

In accordance with the by-law of the American Medical Association the privilege is accorded to me, as Chairman, of opening this annual session of the Section on Pathology and Physiology. Moreover, I am geographically in a position to extend to you, its members, a welcome to the city of Boston and more especially to the laboratories of our medical schools and hospitals, and this I most cordially do. It is the privilege this year of the Section to have as guests Prof. von Frey of Würzburg and Professor Mills of Montreal. To them, in the name of the Section, I extend a hearty welcome and a cordial invitation to take part in all of the proceedings. We feel honored by their presence and anticipate much pleasure and profit from the addresses with which they are to favor us.

On this occasion it has seemed to me fitting briefly to call attention to certain phases of recent American work in pathology and physiology. It is not my intention to give a critical review of any special researches nor to attempt any enumeration of the recent publications. It is the general aspect of the work, not the work in detail, of which I wish to speak, and more particularly of that which in a sense represents some departure from the type of work done in earlier days.

Our medical laboratories may be grouped in four classes: 1, Government laboratories; 2, medical school laboratories; 3, hospital laboratories; 4, independent endowed laboratories.

Of government laboratories we have two classes, national and municipal. Medical laboratories under national supervision represent a recent development in the United States. Many of the departmental laboratories at Washington are indirectly associated with medical science. Those concerned in the standardization of antitoxin, drugs, and foodstuffs are of great importance to the medical profession, but it is medical investigation with which we are now most concerned, and in these lines some creditable work is being done at Washington.

The government laboratories at Manila have gradually grown out of the necessity of an army and navy occupation. Now they occupy a large, new, well-equipped building, forming an extensive plant, active in work. The investigations there of amebic dysentery, plague and other tropical diseases serve as types of their work and amply justify their existence. The facilities they furnished to the recent Harvard expedition for the study of experimental variola and vaccinia illustrates another form of their usefulness. With the extension of social and commercial relations between the United States and the tropics, as is inevitable with the possession of tropical colonies, a knowledge of tropical diseases will become of greater importance and our medical schools will be compelled to teach tropical medicine. Such laboratories as those at Manila should be able to furnish material for such courses and the facilities for our teachers to gain there some first-hand knowledge of the subject. An interchange of material and frequent expeditions should be of such great mutual advantage that the government could afford to furnish transportation and quarters each year for a few of our laboratory workers, and thus give a great stimulus to this branch of medicine in America. Unless this be done these laboratories, in a sense, will fail to accomplish their highest good.

Another form of government activity has been the equipping of commissions for the investigation of special problems. The brilliant results of the commission for the investigation of yellow fever are still fresh in our minds and their vast importance should serve as an incentive for much future work. The recent appropriation for the establishment of a station for the investigation of leprosy in the Hawaiian Islands, to be thoroughly equipped for scientific work and under the direction of a trained investigator, is a type of national government activity along these same lines.

Municipal laboratories have long been in existence in connection with boards of health and their routine work is of almost daily use to every medical man. However, only in recent years has medical investigation been a part of their work, and even now investigation is carried on in but few. The work of the New York City Board of Health, from whose laboratory much scientific work of merit has been published, should serve as an example in this respect to many other municipal laboratories. To serve its highest function, the muncipal laboratory must investigate as well as carry on routine examinations.

Medical school and hospital laboratories are in many cases very intimately associated. Their establishment came fairly early in America. Still, in the last few years, many new laboratories have been opened and great improvement has been made in both the old and the new, the greatest perhaps in those cases where the union between hospital and medical school has been closest and the stimulus of teaching has been strongly felt. This is a fact which can be scarcely disputed and should not remain without influence on the hospital laboratories as yet unattached to medical schools. Much of the advance in the medical school laboratories has been the result of the gradual extension to the medical school of the university spirit, and this influence, in turn, has been felt in the hospitals. With it has come a higher type of work, more experimental investigation, more search after basic principles.

A very large amount of work, much of it excellent in quality, has been produced in such laboratories. This covers a wide range of subjects. In the hospital laboratory most of this has been along the lines of pathology and chemistry. Physiology has lagged too much in the hospital laboratory, where for the most part it is unrecognized. In this respect development is needed in our clinics and may serve to lessen the present too great breach between laboratory and ward worker.

It would be interesting to recapitulate much of this recent work, but time does not suffice. The work of two laboratories, however, I wish to call attention to. In the laboratory of the University of Michigan valuable studies of the trypanosomes and the spirochetæ have been made. It is particularly noteworthy that there, in an inland town in the north temperate zone, investigations could have been carried on with the result of a distinct advance in our knowledge of a group of diseases of man, most of which are confined to the tropics. The results of this work will extend greatly the range of problems capable of successful attack in the laboratories of this country. In the laboratories of the Johns Hopkins Hospital another phase of medical work is shown. There in a laboratory of experimental medicine pathology, physiology, medicine and surgery have been combined; a form of medical coöperation, if I may be permitted the term, is in operation. Diseased dogs are treated and the student learns medicine and surgery. Diseased conditions simulating those occurring naturally are produced; operative technic is acquired. The immediate and late effects are studied by the methods of physiology and clinical medicine; the end results are studied by the methods of pathology. More exact knowledge of the phenomena of certain diseased conditions and a better understanding of their underlying causes are thus obtained. This is a type of laboratory and work which needs to be developed in many of our hospitals if we are to keep pace with medical science abroad.

Independent endowed laboratories are the latest development of medical science in America. They are represented by the Rockefeller Institute in New York, the Institute for the Study of Infectious Diseases in Chicago and the various commissions for the investigation of cancer. Some are organized for the study of special problems, others may devote their attention to a wide field. Recently a change has been made in the mode of attack of many of these special commissions. Instead of attacking the problem directly as in the earlier days, attention is being given to technical methods and more fundamental biologic principles in the hope of thus securing a new path of approach to the central problem. With this new point of view we hear less of the so-called practical. This query, "What is the practical use of the problem?" has too long been a drag stone to investigation in America. This hindrance, I believe, is now disappearing and as a consequence there is more search for the truths at the root of problems, even though any practical application may seem remote. In fact, advance will come earlier from work along these lines and already some of the most practical applications have been the results of most abstract investigations. This change in point of view, to me, marks a new and important phase of American medical investigation.

During the past few years, undoubtedly, distinct progress has been made in medical science in America. More men and more money than ever before are now devoted to the study of pathology and physiology. The subjects have broadened out until they touch more and more the abstract sciences, on the one hand, and clinical medicine and surgery, on the other. The methods of the laboratory are being applied in the clinic and from the clinic are gathered problems for the laboratory; both use more the methods of pure science. It is to be hoped that these changes mark the dawn of a new era for American medicine. Some of the spirit of this new medicine is suffused through the program for this session, to which I now invite your attention.

TWO DESIRABLE REFORMS.*

C. M. JACKSON, M.D.
COLUMBIA, MO.

At commencement exercises themes concerning the improvement of the medical profession are always appropriate. It is only through the aid of the well-trained young men now entering the profession that we may hope for greater progress in the future.

That there is still plenty of room for improvement in the medical profession can scarcely be doubted. If, indeed, we consider the matter carefully we must reach the paradoxical conclusion that the medical profession of the United States ranks at the same time the highest and the lowest among the great civilized nations. In technical skill our leaders, especially in surgery, are probably the best in the world. On the other hand, owing to the low standards of medical education that have prevailed in this country during the past century, it must be frankly confessed that the rank and file of our medical practitioners average low in proficiency. As a single example of this, I might cite the fact that not one practitioner in ten is able to use the microscope effectively, although this instrument is universally acknowledged to be of great practical value in the diagnosis of a large proportion of diseases.

Conditions are changing, however. We are now in the midst of a great movement which has for its object the improvement of medical education and the elevation of the medical profession. Entrance requirements of the medical colleges have recently been advanced from a common-school to a high-school education, and already it is generally recognized that to this at least two years of preparation in college work must soon be added. The time required by the medical course itself has increased fourfold, and the end is not yet.

Even more important than the increase in the entrance requirements, and in the length of the curriculum, is the change that has taken place in the character of the instruction given in medical schools. Corresponding to the rapid modern development of the medical sciences, laboratories have multiplied. These laboratories in all first-class schools have been thoroughly equipped with expensive apparatus and have been placed in charge of teachers who spend their entire time in instruction and research. Clinical instruction has also greatly improved, and that this also may be placed on a true university basis is one of the hopes of the future.

Most important of all, it seems to me, has been the revolution in the spirit of medical education. The old lecture system has been overturned and modern instruction is planned so that the student may learn by observing, thinking and acting for himself. The research spirit and methods so ably presented by Dr. Dodson[1] at the last commencement exercises of this school are beginning to dominate medical education.

---

* An address delivered at the commencement exercises of the Medical Department of St. Louis University, May 19, 1906.

This research spirit, I believe, merits still greater encouragement. We have in our modern laboratories and clinics the facilities and conditions necessary for research work, at least by members of the faculty. Why not go a step further and make provision for research work by the students? The first of the two reforms which I wish to suggest to-night is along this line. I propose that, with this purpose in view, we revive as a requirement for the degree of doctor of medicine the preparation of a thesis, similar to that now required in European schools. I say revive the requirement, for it was in fact a requirement in the few American medical colleges existing before the Revolutionary war. In some medical colleges the custom of requiring a thesis for graduation was maintained until the latter half of the nineteenth century. These were, for the most part, theses in name only, however, being in reality mere compilations based on no original work.

The provision for real thesis work as a requirement for the degree of doctor of medicine could easily be made. A small amount of time, perhaps three hours a week, could be set aside in the senior year to be devoted to the work. At the beginning of the year each senior could select a topic for his thesis, with the advice of some faculty member, under whose supervision he would work. The thesis, after completion, would, of course, be submitted to the faculty for approval. The subjects selected would naturally vary according to circumstances, and would necessarily be simple in character, so that the work might be completed, the literature reviewed and the results worked up in the form of a written thesis within the limited time at the student's disposal. The necessary material for thesis work is already present in abundance in our laboratories and clinics. Why not utilize it in this way?

The first objection to the plan which is likely to arise is that the curriculum is already overcrowded, and that the medical student has no time for additional work. This objection might be met, it seems to me, by reducing to a slight extent in the senior year the time now required for the usual cut-and-dried courses, so as to give opportunity for a bit of original work. If, however, this be considered not advisable, there is still another possibility: through lengthening the curriculum. A fifth year for the medical course is already being seriously considered, and it is one of the desirable changes we shall doubtless see accomplished within a few years. This fifth year will probably be devoted to advanced clinical work, preferably hospital service, and would afford ample time and opportunity for working up a thesis for the doctorate degree.

A second objection which might be advanced is that students have not, as a rule, the ability to do original investigation for thesis work. That excuse might be valid for students of some schools, but not for those of any first-class school with modern equipment and respectable entrance requirements. Any student can do original investigation who can observe accurately and reason logically. And any student who can not do this should certainly not be allowed to enter the medical profession.

Then, again, it may be urged that the plan of requiring a thesis for graduation would throw an additional burden on the members of the already overworked medical faculty, under whose supervision the work would be done. But if the members of the class were properly scattered there would be very few, perhaps only one or two, under the supervision of each member of the faculty. And what member of the faculty would not be willing to give individual assistance to one or two students who wanted to do advanced work in that department? If necessary the teaching force could, of course, be increased to accommodate the extra work.

A more serious objection in the case of many schools is the lack of library facilities. This is one line of equipment which has as yet been greatly neglected in most medical colleges. It is especially important that files of the leading American and foreign periodicals devoted to the various medical sciences should be accessible in every medical college library. They are valuable for use in all instruction, but indispensable for research. I am glad to observe that the Medical Department of St. Louis University has already made a most excellent start in this direction, and I hope that the authorities and other friends of the university will not fail to lend their support in strengthening this most important feature. It costs money, it is true, but this is only one more proof of the statement that modern medical education is the most costly education in the world.

When all the objections to the plan of a thesis requirement have been met, we still have to consider whether it is really worth while. What advantages are to be derived from the measure? In the first place, the adoption of this plan would stimulate the research spirit throughout the entire medical school. It would tend to discourage that bane of modern medical education, the "cramming" system, and to encourage students to think for themselves. Independent thinking is one of the rarest things in the world. The accumulated experience of the past is, of course, not to be despised or neglected. On the contrary, to teach a student to appreciate properly the knowledge handed down to him, there is nothing so effective as to make him dig out for himself even the smallest nugget from the vast mine of undiscovered knowledge.

Training of this sort is also of great practical value to the future practitioner. It has often been said, but can not too often be repeated, that every case in medical practice is a scientific problem, and that every successful practitioner (whether he realizes it or not) is an original investigator. And if the practitioner has learned the research spirit and methods during his medical course of study his success in practice will naturally be more rapid and certain.

Moreover, although the intrinsic value of the results obtained by the work done for theses would in most cases be small, the final effect of such a requirement would be to increase the quantity and to improve the quality of the scientific work done by practicing physicians. Why is it that the average papers read at the meetings of our medical societies are so poor in quality? It is not from lack of time to prepare them. It is certainly not from lack of material. It is because the average physician does not realize what valuable opportunities for research work exist in connection with his practice. He does not know what observations are of scientific value or how to record them. He does not know where to find, for comparison, similar observations turn, has been felt in the hospitals. With it has come a higher type of work, more experimental investigation, more search after basic principles.

---

[1] The Journal A. M. A., July 8, 1905, p. 83.

A very large amount of work, much of it excellent in quality, has been produced in such laboratories. This covers a wide range of subjects. In the hospital laboratory most of this has been along the lines of pathology and chemistry. Physiology has lagged too much in the hospital laboratory, where for the most part it is unrecognized. In this respect development is needed in our clinics and may serve to lessen the present too great breach between laboratory and ward worker.

It would be interesting to recapitulate much of this recent work, but time does not suffice. The work of two laboratories, however, I wish to call attention to. In the laboratory of the University of Michigan valuable studies of the trypanosomes and the spirochetæ have been made. It is particularly noteworthy that there, in an inland town in the north temperate zone, investigations could have been carried on with the result of a distinct advance in our knowledge of a group of diseases of man, most of which are confined to the tropics. The results of this work will extend greatly the range of problems capable of successful attack in the laboratories of this country. In the laboratories of the Johns Hopkins Hospital another phase of medical work is shown. There in a laboratory of experimental medicine pathology, physiology, medicine and surgery have been combined; a form of medical coöperation, if I may be peritted the term, is in operation. Diseased dogs are eated and the student learns medicine and surgery. Diseased conditions simulating those occurring naturally are produced; operative technic is acquired. The immediate and late effects are studied by the methods of physiology and clinical medicine; the end results are studied by the methods of pathology. More exact knowledge of the phenomena of certain diseased conditions and a better understanding of their underlying causes are thus obtained. This is a type of laboratory and work which needs to be developed in many of our hospitals if we are to keep pace with medical science abroad.

Independent endowed laboratories are the latest development of medical science in America. They are represented by the Rockefeller Institute in New York, the Institute for the Study of Infectious Diseases in Chicago and the various commissions for the investigation of cancer. Some are organized for the study of special problems, others may devote their attention to a wide field. Recently a change has been made in the mode of attack of many of these special commissions. Instead of attacking the problem directly as in the earlier days, attention is being given to technical methods and more fundamental biologic principles in the hope of thus securing a new path of approach to the central problem. With this new point of view we hear less of the so-called practical. This query, "What is the practical use of the problem?" has too long been a drag stone to investigation in America. This hindrance, I believe, is now disappearing and as a consequence there is more search for the truths at the root of problems, even though any practical application may seem remote. In fact, advance will come earlier from work along these lines and already some of the most practical applications have been the results of most abstract investigations. This change in point of view, to me, marks a new and important phase of American medical investigation.

During the past few years, undoubtedly, distinct progress has been made in medical science in America. More men and more money than ever before are now devoted to the study of pathology and physiology. The subjects have broadened out until they touch more and more the abstract sciences, on the one hand, and clinical medicine and surgery, on the other. The methods of the laboratory are being applied in the clinic and from the clinic are gathered problems for the laboratory; both use more the methods of pure science. It is to be hoped that these changes mark the dawn of a new era for American medicine. Some of the spirit of this new medicine is suffused through the program for this session, to which I now invite your attention.

TWO DESIRABLE REFORMS.*

C. M. JACKSON, M.D.
COLUMBIA, MO.

At commencement exercises themes concerning the improvement of the medical profession are always appropriate. It is only through the aid of the well-trained young men now entering the profession that we may hope for greater progress in the future.

That there is still plenty of room for improvement in the medical profession can scarcely be doubted. If, indeed, we consider the matter carefully we must reach the paradoxical conclusion that the medical profession of the United States ranks at the same time the highest and the lowest among the great civilized nations. In technical skill our leaders, especially in surgery, are probably the best in the world. On the other hand, owing to the low standards of medical education that have prevailed in this country during the past century, it must be frankly confessed that the rank and file of our medical practitioners average low in proficiency. As a single example of this, I might cite the fact that not one practitioner in ten is able to use the microscope effectively, although this instrument is universally acknowledged to be of great practical value in the diagnosis of a large proportion of diseases.

Conditions are changing, however. We are now in the midst of a great movement which has for its object the improvement of medical education and the elevation of the medical profession. Entrance requirements of the medical colleges have recently been advanced from a common-school to a high-school education, and already it is generally recognized that to this at least two years of preparation in college work must soon be added. The time required by the medical course itself has increased fourfold, and the end is not yet.

Even more important than the increase in the entrance requirements, and in the length of the curriculum, is the change that has taken place in the character of the instruction given in medical schools. Corresponding to the rapid modern development of the medical sciences, laboratories have multiplied. These laboratories in all first-class schools have been thoroughly equipped with expensive apparatus and have been placed in charge of teachers who spend their entire time in instruction and research. Clinical instruction has also greatly improved, and that this also may be placed on a true university basis is one of the hopes of the future.

Most important of all, it seems to me, has been the revolution in the spirit of medical education. The old lecture system has been overturned and modern instruction is planned so that the student may learn by observing, thinking and acting for himself. The research spirit and methods so ably presented by Dr. Dodson[1] at the last commencement exercises of this school are beginning to dominate medical education.

---

* An address delivered at the commencement exercises of the Medical Department of St. Louis University, May 19, 1906.

This research spirit, I believe, merits still greater encouragement. We have in our modern laboratories and clinics the facilities and conditions necessary for research work, at least by members of the faculty. Why not go a step further and make provision for research work by the students? The first of the two reforms which I wish to suggest to-night is along this line. I propose that, with this purpose in view, we revive as a requirement for the degree of doctor of medicine the preparation of a thesis, similar to that now required in European schools. I say revive the requirement, for it was in fact a requirement in the few American medical colleges existing before the Revolutionary war. In some medical colleges the custom of requiring a thesis for graduation was maintained until the latter half of the nineteenth century. These were, for the most part, theses in name only, however, being in reality mere compilations based on no original work.

The provision for real thesis work as a requirement for the degree of doctor of medicine could easily be made. A small amount of time, perhaps three hours a week, could be set aside in the senior year to be devoted to the work. At the beginning of the year each senior could select a topic for his thesis, with the advice of some faculty member, under whose supervision he would work. The thesis, after completion, would, of course. be submitted to the faculty for approval. The subjects selected would naturally vary according to circumstances, and would necessarily be simple in character, so that the work might be completed, the literature reviewed and the results worked up in the form of a written thesis within the limited time at the student's disposal. The necessary material for thesis work is already present in abundance in our laboratories and clinics. Why not utilize it in this way?

The first objection to the plan which is likely to arise is that the curriculum is already overcrowded, and that the medical student has no time for additional work. This objection might be met, it seems to me, by reducing to a slight extent in the senior year the time now required for the usual cut-and-dried courses, so as to give opportunity for a bit of original work. If, however, this be considered not advisable, there is still another possibility: through lengthening the curriculum. A fifth year for the medical course is already being seriously considered, and it is one of the desirable changes we shall doubtless see accomplished within a few years. This fifth year will probably be devoted to advanced clinical work, preferably hospital service, and would afford ample time and opportunity for working up a thesis for the doctorate degree.

A second objection which might be advanced is that students have not, as a rule, the ability to do original investigation for thesis work. That excuse might be valid for students of some schools, but not for those of any first-class school with modern equipment and respectable entrance requirements. Any student can do original investigation who can observe accurately and reason logically. And any student who can not do this should certainly not be allowed to enter the medical profession.

Then, again, it may be urged that the plan of requiring a thesis for graduation would throw an additional burden on the members of the already overworked medical faculty, under whose supervision the work would be done. But if the members of the class were properly scattered there would be very few, perhaps only one or two, under the supervision of each member of the faculty. And what member of the faculty would not be willing to give individual assistance to one or two students who wanted to do advanced work in that department? If necessary the teaching force could, of course, be increased to accommodate the extra work.

A more serious objection in the case of many schools is the lack of library facilities. This is one line of equipment which has as yet been greatly neglected in most medical colleges. It is especially important that files of the leading American and foreign periodicals devoted to the various medical sciences should be accessible in every medical college library. They are valuable for use in all instruction, but indispensable for research. I am glad to observe that the Medical Department of St. Louis University has already made a most excellent start in this direction, and I hope that the authorities and other friends of the university will not fail to lend their support in strengthening this most important feature. It costs money, it is true, but this is only one more proof of the statement that modern medical education is the most costly education in the world.

When all the objections to the plan of a thesis requirement have been met, we still have to consider whether it is really worth while. What advantages are to be derived from the measure? In the first place, the adoption of this plan would stimulate the research spirit throughout the entire medical school. It would tend to discourage that bane of modern medical education, the "cramming" system, and to encourage students to think for themselves. Independent thinking is one of the rarest things in the world. The accumulated experience of the past is, of course, not to be despised or neglected. On the contrary, to teach a student to appreciate properly the knowledge handed down to him, there is nothing so effective as to make him dig out for himself even the smallest nugget from the vast mine of undiscovered knowledge.

Training of this sort is also of great practical value to the future practitioner. It has often been said, but can not too often be repeated, that every case in medical practice is a scientific problem, and that every successful practitioner (whether he realizes it or not) is an original investigator. And if the practitioner has learned the research spirit and methods during his medical course of study his success in practice will naturally be more rapid and certain.

Moreover, although the intrinsic value of the results obtained by the work done for theses would in most cases be small, the final effect of such a requirement would be to increase the quantity and to improve the quality of the scientific work done by practicing physicians. Why is it that the average papers read at the meetings of our medical societies are so poor in quality? It is not from lack of time to prepare them. It is certainly not from lack of material. It is because the average physician does not realize what valuable opportunities for research work exist in connection with his practice. He does not know what observations are of scientific value or how to record them. He does not know where to find, for comparison, similar observations already recorded in the storehouse of medical literature. He has had no training in bringing his observations and conclusions into shape for presentation and publication. These deficiencies, at any rate in large part, would be supplied by the proposed requirement of original thesis work. There are undoubtedly to-day a great many unproductive physicians who could and would make valuable contributions to the advancement of medical science if some such training had been provided in the medical school.

---

[1] The Journal A. M. A., July 8, 1905, p. 83.

Finally, the requirement of a thesis would add to the value and dignity of the degree of doctor of medicine. The doctor of divinity and the doctor of philosophy must each present a dissertation. The degree of doctor of medicine should represent attainments equally high. A thesis for the doctorate in medicine has long been required in Germany and in most of the other great European nations. America is slow in following their example, but "better late than never." Let it no longer be just to reproach the doctor of medicine with the phrase, *doctor sed non doctus!*

There is a second line of needed reform, without which no extensive improvement of the medical profession as a whole can be expected. The requirement of a graduation thesis is a measure which could be adopted and enforced by any medical college. But this, like the great improvements in various directions already made by many medical colleges, does not insure an improvement of the entire medical profession. As a matter of fact, only a small percentage of the medical colleges have kept pace with the advancing standards. Only a few colleges have had the progressive spirit, the ability and the courage to increase adequately the entrance requirements, to equip and to maintain first-class laboratories and clinics and to insist on a high standard of work. The result has been that the high-class schools often suffer from competition with inferior colleges having low requirements. In accordance with a fundamental law of Nature that all bodies move in the direction of least resistance, medical students tend to flock toward those institutions offering the medical degree for the least expenditure of time, money and energy. Why does this tendency, so clearly detrimental to the public welfare, remain unchecked? Why are the low-grade medical colleges still permitted to grind out annually thousands of unqualified graduates to swell the ranks of the already overcrowded medical profession?

It might be argued that the fault lies with the public; that if the people would refuse to patronize incompetent physicians the inferior medical schools would soon die a natural death. But the people are practically helpless. Even the most intelligent laymen often display a pitiful and disastrous lack of judgment in choosing medical advice. They must trust largely to appearances, and even the most incompetent practitioner usually manages to conceal his defects and to make a fine outward appearance. No, it is impossible for the public to protect themselves individually in medical matters. They must depend on the State for protection.

State protection depends primarily on the medical examining and licensing boards. The responsibility for present conditions, therefore, apparently lies chiefly with the licensing boards of the various states. It is to them that we must look for reform in this line. They, and they alone, have the power to protect the public on the one hand and to encourage the progressive medical colleges on the other. The state examinations may be compared to a dam placed across the channel of a river. The water of the stream rises to a level high enough to overleap the barrier, but no higher. Similarly, in medical education the great majority of medical students will prepare themselves to meet the minimum requirements, but no more.

It is but just to the state boards, however, to remember that they have had many difficulties to contend with. All of them, moreover, have improved, and in some states, notably New York and Michigan, they have materially advanced the cause of medical education. I do believe, however, that the majority still lag far behind what ought to be the minimum requirements.

The particular deficiency which I desire to point out in this connection concerns not the thoroughness but the character of the state examinations. The trouble, it seems to me, is not so much that the examinations are too easy as that they are not of the right kind.

To approach this question intelligently we must bear in mind the purpose of the state examination. It is, of course, to determine whether the candidate is properly qualified to practice medicine—to diagnose and to treat properly the various diseases. Do the state examinations fulfill this purpose? Are they a fair test of a man's ability to practice medicine? It does not require much argument to prove that in this respect they are utterly inadequate.

In this connection I will venture to make what may seem to be a preposterous statement. I believe that any young man with a good memory could in a few months memorize a set of quiz compends, and (if allowed to try) could pass the state board examinations in many states without ever having seen the inside of a medical college. And, furthermore, in some instances, if all reports be true, he need not even have a good memory, provided that he carry the quiz compend in his pocket!

The evils of such conditions need only to be pointed out to be condemned. But the important question is, How should the examinations be changed? Would a set of judicious questions, thorough but fair, and a system of inspection which would exclude cheating meet the requirements? It would doubtless be an improvement, but it would still be inadequate. The trouble is that our present system of written examinations is founded on a wrong principle. Nor would oral examinations (from a mere list of questions) help matters much. The ability to answer questions in this way depends largely on word memory, and word memory is no fair index of ability to practice medicine.

The only real and fair test, it seems to me, is a trial at the thing itself, or something as near to it as possible. Let us see how this principle may be applied. It may be assumed as self-evident, in the first place, that a knowledge of the normal and abnormal structure and functions of the human body is an essential prerequisite to the successful practice of medicine. What, for example, is a fair test of a student's knowledge of the anatomy of the triangles of the neck? It is certainly not the ability to repeat words of description which he may merely have committed to memory from a text-book, but (what is a vastly different thing) his ability to find, recognize, understand and explain the various structures from an actual preparation or on the living body. The same principle holds not only for all the fundamental sciences but even more forcibly for the clinical branches. For example, a student may be able to write a full and accurate description of a disease, and yet fail completely even to recognize that disease when he meets the practical test at the bedside.

A practical examination, therefore, is absolutely necessary to exclude incompetents and to test fairly the candidate's ability to practice medicine. It might not be wise to exclude altogether the usual form of written or oral examinations, for a certain amount of memorization is undoubtedly necessary in medicine. Such tests, however, ought to be made strictly subordinate to the practical tests mentioned.

Conceding the theoretical superiority of such practical examinations, the question now arises as to whether or not it would be possible for the state boards, under present conditions, to carry out such a plan. It seems to me quite possible. The necessary materials could usually be obtained without difficulty. The laboratories of any good medical school could readily furnish whatever specimens and apparatus might be necessary to test the candidate's knowledge of the fundamental sciences. Similarly, arrangements could doubtless be made with public or private hospitals for the use of material for the practical clinical examinations.

The greatest difficulty would doubtless be the increased amount of time necessary to conduct the examinations. Such examinations would necessarily consume much more time than the present plan, for they would be largely individual in character. As a necessary consequence the examinations would also be much more costly. But they would be well worth the additional cost, whether this cost be borne by the state or by the individual applicants.

That such a plan is entirely practicable is shown by the experience of Germany, where the state examinations are of such a practical character. In Germany there is an additional improvement, in that the state examinations are divided into two parts. The first examination, the *tentamen physicum,* comes at the end of the first two years of the medical course and covers the fundamental branches. The second and final examination at the end of the course is exclusively clinical in character. The advantage of this plan is that the student must have satisfactorily completed the work in the fundamental sciences before he is allowed to proceed with his clinical work. Many incompetents are thus weeded out at the end of the first two years.

If Germany can carry out a plan so cumbersome and costly, and yet so effective, why can not we? Is human life any less valuable here than there? The adoption of some such plan by our various states would be of the utmost value in the improvement of the medical profession. It would encourage higher medical education and protect the health and lives of the people.

IMPRACTICABILITY OF INTERSTATE RECIPROCITY.*

EDWIN B. HARVEY, M.D.
Secretary of the Massachusetts Board of Registration in Medicine.
BOSTON.

Interstate reciprocity, so-called, has been discussed to some extent in every convention of this organization during the last decade. It has survived the storms of debate for so many years from the fact, no doubt, that it possesses some features of interest to certain members of the profession, some problems which have been labored with, but not yet solved to the satisfaction of all, and which may not be in the discussions of to-day. It is a trite saying that no question should be settled until settled rightly. Our distinguished president, thinking perhaps that further agitation of this subject at the present time might be of interest, asked me a few days ago to write a brief paper for this convention on the impracticability of interstate reciprocity.

Interstate reciprocity should be considered impracticable, however widely practiced, if it does not conserve the broadest needs of society, the protection of the community in the best possible manner against the evils of charlatanism in medical practice. From this standpoint the argument of this paper is drawn.

WHAT IS RECIPROCITY?

The word reciprocity, unfortunately, has been chosen to stand for mutual recognition of medical registration certificates by state boards. This word belongs strictly to the literature of politics. In political circles it is much used at the present time in discussing trade relations between different countries. In such connection it has a well-understood meaning. The *North American Review,* in an article published not long ago, says:

> Reciprocity is only an international form of protection, signifying an equality between the citizens of two countries with respect to the commercial privileges to be enjoyed by each country within the domain of the other.

In this sense the word was first officially used in 1782, in the provisional treaty of commerce between the United States and England. The following may be cited as an illustration of the workings of this principle in international affairs: Canada recently said to the United States, We will allow your cotton goods manufacturers to dispose of the products of their factories in our country without levying duty thereon, provided you will allow our lumbermen to dispose of the products of their mills in your country on the same conditions. The United States replied, Such stipulations are not practicable, for we, too, grow forests and manufacture all the lumber we require for home purposes. The acceptance of your proposition would result in great injury to an important home industry which must be protected in the interests of our own people.

In every instance in international affairs we find that reciprocity has reference only to the importation of such goods or material as the receiving country does not produce at all or only in quantities insufficient to meet the public necessity. Reciprocity in political affairs has an eye ever to the protection of home interests, the prosperity of home institutions. But interstate reciprocity of medical licensure bears a different signification. For example: The state of Maine has a reciprocity clause, so-called, in its registration law. Maine says to New Hampshire, Why should we not reciprocate? We will permit your physicians to locate in Maine and will grant them a license without imposing any restrictions whatever as to their qualifications, provided you will receive our physicians on the same conditions. Such an understanding between two states, in medical parlance, is called reciprocity. But it is not reciprocity in the sense of affording protection. It is a free-trade arrangement wherein the primary object of medical legislation in the states is wholly ignored.

METHODS OF REGISTRATION.

Three methods of registration concern us to-day. In some seventeen or eighteen states registration is effected through an examination only, Massachusetts, North Carolina, Mississippi, and practically New York, Pennsylvania and California are in the list. The consideration and acceptance of credentials issued by another state board or foreign country, irrespective of reciprocity, is a method of registration in several states. New Jersey and Connecticut may be cited as examples. The third system is the reciprocating system, the I-will-if-you-will system, which has been adopted by thirteen or fourteen states. Maine, Vermont, Michigan, Wyoming and Oregon are examples. It is against this I-will-if-you-will system that this paper is specially directed.

---

* An address delivered before the National Confederation of State Licensing and Examining Medical Boards, Boston, June 4, 1906.

MEDICAL PRACTICE LAWS.

For a moment let us consider the basic principle on which all state laws relating to the practice of medicine are constructed. Justice Field, of the United States Supreme Court, in rendering an opinion of the full bench on a question raised as to the constitutionality of such legislation, says:

> The power of the state to provide for the general welfare of its people, authorizes it to prescribe all such regulations as in its judgment will secure, or tend to secure, its people against the consequences of ignorance and incapacity. . . . Due consideration, therefore, for the protection of society may well induce a state to exclude from the practice of medicine those who . . . are found, on examination, not to be fully qualified.

This opinion by the highest court in the country is authoritative. It declares that protection of society underlies state medical legislation everywhere in this country. The fact that, to be constitutional, medical legislation must be based on the necessities of society for protection against certain real or supposed evils, should be kept constantly in mind in discussing interstate reciprocity.

In 1894 Massachusetts enacted a medical practice bill which, with a few modifications, is the law of the state to-day. When this bill was under discussion the only argument of influence advanced in its favor was the need of such a law to safeguard the people of the commonwealth, as far as possible, against the charlatan and the incompetent, whose methods and practices constituted an evil amounting to a real menace to the well-being of society. Not a word was said that such a law would in the least benefit or enhance the convenience of practitioners of medicine. Such a suggestion might have proved disastrous.

The outcome of this effort to secure medical legislation was the stablishment of a state commission to determine the qualifications of applicants, irrespective of college diploma or certificates of registration issued by other states. Should an advocate of reciprocity petition the legislature now for an amendment to this law, providing for the admission of physicians to practice in this commonwealth by virtue of certificates of registration granted by other states, the question would be raised at once as to what or whose interests would be promoted by the enactment of such a bill? The petitioner of necessity would reply that such an amendment would make itinerancy easy, that it would facilitate the advent into this state of physicians from other states looking for new fields for practice, inasmuch as they would not be called on to submit to examination tests as to their qualifications. Such amendatory legislation would admit to the ranks of the profession in this state persons adjudged qualified to practice by educational standards inother states, some of which at least may well be considered inferior to our own.

Should access to practice in any state be made thus easy? Is scarcity of physicians one of the evils confronting the people in any state to-day? If so, all restrictions on the importation of foreign talent should be removed and no scrutinizing tests applied. Rather than to advocate such a procedure of medical licensure, would it not be wiser and better to endeavor to limit the supply of practitioners, if possible, through efforts to achieve still higher standards in the medical school and in the licensing board in order that the men and women and children throughout all the states may be better protected in life and health and comfort by being brought into closer contact with a higher order of intelligence and skill in the medical profession?

It surely rests with the advocate of free interchange of registration certificates, call it reciprocity if you please, before his cause should receive recognition, to demonstrate how such a process of medical registration will best secure, or best tend to secure, the people of any state "against the consequences of ignorance and incapacity." The highest court in the land has said that considerations looking to the protection of society are the only considerations which enable a state to prescribe regulations to exclude from, or to admit any one to, the practice of medicine.

OBJECTIONS TO SO-CALLED RECIPROCITY.

At the risk of repeating myself somewhat, I desire to look at this matter from the standpoint of state regulations providing for reciprocity.

It Confers Exclusive Privileges on Certain Persons.—I contend that such regulations or statutory provisions as established in Maine, for instance, and in a number of other states, in effect confer exclusive privileges on certain persons. It must be clear to every one that the provisions of the Maine law discriminate against the citizens of that state and in favor of citizens of other states. Residents of Maine, young men of undoubted character and education, graduates of the Maine Medical School, applying for license to practice, are required to submit to a test examination by the Maine board; but young men residing in Tennessee, for instance, graduates of some one of the inferior medical schools in that state and registered there through the leniency of the examining board, would not be so required. Such a method of registration on the part of Maine surely constitutes a marked discrimination against the citizens of that state and, therefore, contravenes the provisions of the Maine state constitution.

It avails nothing to say that the applicant from abroad has taken one examination in his home state. Be that true, it may have been an examination equivalent, or not, to the usual examination tests in the state in which he seeks a license. If not equivalent, as likely not to be, the registration of physicians of low grade results. I contend that few states, if any, can afford to assume such a risk, lest they encourage thereby lower educational standards in the medical schools and in the profession generally.

Again, if reciprocity is to prevail to any great extent, it should prevail to the fullest. It should apply to all registered practitioners in the reciprocating states, irrespective of time or manner of registration; otherwise we would have class legislation, laws discriminating in favor of some and against others in the same line of business. This point, which, I think, is well taken, is ably presented by Dr. Beverly D. Harison,[1] the secretary of the Michigan examining board and a warm advocate of interstate reciprocity. He maintains that reciprocity, to be constitutional and of value to the profession (he does not say to the public), should include nearly the entire list of registered practitioners. He says:

---

[1] Harison, Beverly D.: THE JOURNAL A. M. A., August 13, 1904, p. 482; also Medical Record, Oct. 4, 1902, page 525; also Bulletin of the Academy of Medicine, October, 1905.

> Reciprocal legislation which provides only for the present and future practitioner, and ignores the older and experienced practitioner, for the reason that the latter has not obtained his license through a state board examination, is not only irrelevant and unjust, but is also unconstitutional.

Dr. Harison is consistent in the position he has taken. His is the only kind of reciprocity that would be just to the profession. But how many practitioners are there in any state ready to advocate such a far-reaching scheme, which is neither more nor less than an open door to admit to practice in any state any outsider without imposing any important restrictions whatever, except his ability to pay a registration fee.

2. It Deteriorates the Standard of Medical Education.—I assume that all the states are in favor of maintaining high standards of excellence in the profession. But under reciprocity, limited or unlimited, high standards, it seems to me, can not be maintained. How can a pond rise higher than its source of supply? Under reciprocity the standard of qualifications for practice in Pennsylvania, for instance, would fall practically to the level of the standards maintained in the reciprocating states, from which, in part, it would draw its supply of practitioners. I wish to be clearly understood on this point, because it is one of great importance to the public, in whose interests state commissions are established and, from year to year, are upheld.

One of the bulletins of the Academy of Medicine, published in 1904, contains much interesting and important statistical matter relating to the work of examining boards in 1903 in the several states. Similar statistics for the year 1904 were published in THE JOURNAL of the American Medical Association.[2] These statistics show the number examined in the different states and the percentages of successful and non-successful applicants. It is a matter of interest to note that these percentages are practically the same for each state for the years covered by the statistics, a fact which tends to show that the different states have fixed standards of qualifications to which from year to year they adhere with marked uniformity.

In 1904 Pennsylvania reported the examination of 581 applicants, of whom 20.8 per cent. failed; Connecticut reported 93 applicants examined, of whom 28 per cent. failed; California reported 296 examined, of whom 20 per cent. failed; New Jersey, 96 applicants, of whom 20.8 per cent. failed; Maryland, 187 examinations, 35.3 per cent. failures; Virginia, 175 examinations, 30.8 per cent. failures; Massachusetts reported 330 graduates examined, of whom 94 were from the Harvard Medical School. The percentage of failures for the year was 18.5 per cent.

By the side of this list place the following: Illinois reported 762 examinations, with 4.5 per cent. failures; Nebraska, 100 examinations, 7 per cent. failures; Ohio, 249 examinations, 5.2 per cent. failures; Georgia, 114 examinations, 3.5 per cent. failures; Michigan reported 53 examinations, with only 1.9 per cent. failures; Vermont, 55 examinations, 1.8 per cent. failures.

With such a showing of inequality in examination results in the states quoted, how can any one for a moment harbor the opinion that interstate reciprocity is practicable? Can Pennsylvania, drawing largely its supply of applicants for licensure from its excellent medical schools in Philadelphia, afford to fraternize with Illinois in a fee interchange of license certificates? By what subtle mental process is the conclusion reached that 4.5 per cent. of failures in one state is an exact measurement of 20.8 per cent. in the other? Does the difference of 16.3 per cent. of failures represent the superiority of the applicants in Illinois over those in Pennsylvania? Is it not more reasonable to conclude that the difference in percentages so uniform from year to year in the two states represents pretty closely the difference in examination methods and requirements? That the difference is due to the examiners, not to the applicants examined? But reciprocity, it is said, is based on equality of qualifications established by the examining boards in the reciprocating states.

In the published proceedings of the sixteenth annual meeting of American medical colleges, held recently, a distinguished member[3] of the profession is reported as saying:

> The primary object of the legislature is to supply qualified medical practitioners to the people, and that is always the object that the boards must have in view.

Truly and wisely said. But that is just what the advocates of reciprocity never have in view. The fact that such is the primary object of the legislature in every state in the Union in creating examining boards is the keynote reason why under existing conditions in this country interstate reciprocity is impracticable.

All moving bodies, animate as well as inanimate, follow the lines of least resistance. A wife in New York tires of her marital relations and longs for the freedom of single blessedness. She does not apply in the courts in that state for a decree of freedom. She would meet with too much resistance there; she equips herself for a few months residence in one of the Dakotas where she accomplishes her purpose and returns to New York a single woman. Here Dakota dominates New York. A young man in Connecticut is inspired with the desire for a medical education. He, too, follows the lines of least resistance and enters a weak school in Tennessee or Maryland. In due time he receives his diploma and is ready, he thinks, for practice. He desires to live his life in the practice of medicine in his native state, but he finds in Connecticut too much resistance in the examining board. So by force of circumstances he seeks and finds recognition as a practitioner in some other state whose laws and methods of registration are less stringent. In due time he returns to his native state with clean papers. Under reciprocity he is enrolled as a qualified practitioner. By such a method of registration, high educational standards disappear both in the examining board and in the medical school. Reciprocity levels down, never up. Logically considered, no other conclusion can be arrived at. Under reciprocity, states whose laws and requirements for registration are most lax dominate all the other states.

Last March, and again last month, two young men, last year graduates, one from a Baltimore school and the other from a Boston college, were before the Massachusetts board. In their last examinations the average rating of each, as returned by the examiners, was less than 65 per cent. and yet since their first failure in Massachusetts last March, both of these young men have successfully taken the board examination in another state and have received their certificates of registration. Under reciprocity, Massachusetts would be asked to admit these parties to practice, notwithstanding its state board had twice refused them recognition on the ground of incompetency. What can be said to illustrate more forcibly the impracticability of interstate reciprocity?

---

[2] Vol. xliv, May 6, 1905.

[3] B. D. Harison of Michigan.

The rating of examination papers is not an exact science, and from the nature of the work can never become so. A required general average of 75 per cent. for a successful examination means nothing whatever to any one, or to any examining board, other than the board establishing such percentage, as its starting and finishing point in working out its conclusions as to an applicant's capabilities to practice. It is an arbitrary requirement which might just as well be fixed at 65, 70 or 80 per cent. as at 75. "It is not the thing itself, but the way it is looked at that gives delight."

3. *It is of Limited Usefulness.*—Again, were interstate reciprocity universal among all the states and territories in the United States, its utility would not apply to more than one-half of one per cent. of the practitioners in the country who have been in practice for a period of not less than three years; and fully 90 per cent. of that one-half of one per cent. would include only the unsuccessful, the poorly equipped, the indolent members of the profession who are ever on the move looking for more productive fields in which to labor.

The medical profession is not a caravan on wheels. The call to the successful practitioner is not to move on, but to remain a fixture in the state and locality where he has earned a reputation and a merited recognition and where his usefulness is appreciated. To him reciprocity does not appeal. But we are told that there are "experienced and notable men in the profession, professors and teachers in medical colleges," to whom, in case they should need to change their state citizenship, reciprocity would be a "deserving and relieving measure." This is probably true, but such instances are very infrequent and too unimportant to the general welfare of the community to require special legislation in their behalf. Moreover, many examining boards have, and all should have, discretionary powers bearing on the examination and registration of such applicants. Their way into the ranks of the profession within the jurisdiction of any board, can be and should be made easier and more inviting than the course of procedure afforded by reciprocity.

4. *It is Impracticable Because of State Sovereignty.*—We are told by the advocates of reciprocity that registration laws put a "restraint on individual freedom guaranteed by the Constitution of the United States," that state boundaries are imaginary lines, and that physicians are not permitted to cross state lines to relieve human suffering. Were such statements true, reciprocity would not relieve the situation, for reciprocity is a method of registration, however undesirable. If they mean anything, they mean that there should be no legislation whatever regarding medical practice. The statement regarding the curtailment of individual freedom guaranteed by the Constitution, is a "glittering generality," thrown in the face of numerous decisions of the Supreme Court. Again, the registration laws in nearly every state in the Union provide for over-the-border practice by physicians residing in border towns. This class of practitioners is not calling for reciprocity.

Bearing on the impracticability of interstate reciprocity, much might be said on differences of legislation on medical matters in the different states; that in regard to skilled labor, professional work of all kinds other than medical, such as teaching, plumbing, engineering, or any other business conducted under a state license, or civil service regulations, reciprocity among the states is unknown. Each state is ever intent on the welfare of its own inhabitants. It sets its own standards for every department of endeavor and adheres to them with a spirit of enlightened state pride. On such matters the congress of the United States has no voice or control. The several states, under the Constitution of the general government, being left to themselves as independent judges on all such matters, it happens that wide differences of opinion on most subjects of legislation exist, which opinions find expression in law.

In matters medical I see no good reason why we should advocate interstate reciprocity between Maine and Connecticut, any more than between Maine and Canada. Canada, it is true, is a province of Great Britain, but the English parliament exercises no authority over Canadian practitioners, because Canada enjoys the privilege of legislating for itself in respect to its domestic affairs, just as each of our states is privileged by our general government.

Advocates of reciprocity are wont to refer to the fact that a license to practice granted by Great Britain, enables one to practice in any part of the United Kingdom, without being called on to submit a second time to an examining board test. But this fact does not help their cause in the least. The government of Great Britain and Ireland is monarchical; that of the United States is republican. One legislative body, the English parliament, enacts laws for the entire kingdom. In the United States there are fifty legislative bodies, each a parliament, so to speak, making laws for its own independent body of people, on all matters relating to its domestic affairs. A stranger entering the jurisdiction of the English government, for the purpose of practicing medicine, must prove his qualifications as required by the laws of that parliament. And this is the exact status of affairs in each of the sovereign states in this country. Interstate reciprocity therefore, receives no encouragement in an appeal to English methods of dealing with medical practitioners.

The spirit of commercialism enters to such an extent into the trades and professions everywhere, and incompetency and deception manifest themselves in so many ways detrimental to the safety and happiness of individuals and communities, the states have found it necessary to place restrictions on, or limitations to, almost everything from the preaching of the gospel down to the running of an automobile in the public streets. This they do not only to conserve, but to enhance public interests, to keep open the avenues of progress in science and art. Thus it happens that we meet on every hand, restrictions and prohibitions, as well as permissions and choice of action.

The practice of medicine without a license is a prohibition in all the states, and the conditions on which such a license can be granted, are fixed by law. Each state has its conditions, laws and ideals. Let each state adhere to its own. It has ever been the spirit of the old commonwealth of Massachusetts to maintain high standards in all lines of its endeavor, especially in regard to its educational institutions. Ever aiming at the highest, it desires to accept none that are inferior. As members of this organization, men and physicians, inspired by broad philanthropic purposes, let us cling to high ideals of professional achievement, usefulness and dignity.

Original Articles

ENTRANCE REQUIREMENTS.*

GEORGE W. WEBSTER, M.D.
Chairman of Committee on Entrance Requirements, Vice-President National Confederation of State Medical Examining and Licensing Boards, President Illinois State Board of Health.
CHICAGO.

At the annual meeting of this confederation at Atlantic City, June, 1904, I had the honor to submit a standard curriculum for medical colleges and to suggest in connection therewith that the entrance requirement should be the following:

(a) Seven years in the primary or grammar school.

(b) Four years of high school, preference being given to the scientific rather than the literary course.

(c) A special course of two years in chemistry, physics, biology and languages; or, a college course in which the last two years shall have been modified to meet the demands of the medical student.

This standard of preliminary entrance requirements was not adopted, but the committee was instructed to make a report at this meeting of the confederation. In the report, among other things, I said:

> The idealism of the German university maintains that the object and aim of an education is to develop in a symmetrical manner the mental faculties, to enable one to live to the utmost, to enjoy being. It is a doctrine of being, rather than of doing, of idealism rather than of realism, of the theoretical rather than the practical.
>
> On the other hand, there is a very large class who insist in the social, and more especially the economic, utility of all human actions. They believe in the practical, the utilitarian, that which produces immediate results. They want men who do things.
>
> The former argue that a man should devote 7, 4, 4, 4, 2 = 21 years of the best of his life to acquiring an education. Such a man, if he was always well, enjoyed good health in childhood, missed no time at school, and took no time for travel, would be ready to begin to earn his first fee at twenty-seven or twenty-eight years of age.
>
> A system of education which demands that a man shall spend twenty-eight or thirty years of his life in preparation for active participation in its duties, that he earn his first fee at even twenty-five or twenty-eight years of age, seems in this eminently practical age, and as measured by organized society, to be impracticable and impossible.
>
> Even in the so-called reputable medical colleges, there is nothing which approaches agreement as to the entrance requirements to be enforced, and in many of the medical colleges, these requirements are something fearfully and wonderfully made.
>
> Unfortunately, the question in the past has been, *not* what constitutes the very best preparation for the very best kind of life work, but, Where can I get the largest number of degrees with the least work, the least expenditure of time, and a minimum of expense?
>
> We should determine, as far as we may, what constitutes the ideal medical course, and then what kind of foundation such a course should have; in other words, the character of the preliminary training.
>
> Educators in general have given insufficient attention to the special requirements demanded by the student desiring to enter medicine as a career, and have not done their duty in aiding the trend of special mental development necessary to the successful practice of medicine.
>
> In this country there is an unmistakable rift between studies for culture and studies for vocation. The college course is pursued for culture rather than as a preparation for the professions.
>
> I believe that the liberal arts degree has, in a sense, at least, determined our educational standard; that it is the mark of the well educated man, irrespective of his calling, and that for those who are considering merely technical training rather than culture, there should be at least one year added to the medical course, a connecting link, and at present a weak one, between the high school and the medical school, and consisting of physics, chemistry, general biology, Latin and German or French, or both. Possibly the plan suggested by President Butler, of Columbia, would be even better than this. He says: "There should be a *college* course of two years in length, carefully constructed as a thing by itself, and not merely the first part of a three-year or four-year course, which will enable intending professional students to spend this time as advantageously as possible in purely liberal studies.

PRESENT CONDITIONS.

At the present time we are confronted by the following facts:

First.—The medical curriculum of the Philadelphia Medical College, founded in 1766, consisted of two courses of lectures of about sixty hours each, one in anatomy by Dr. Shippen, the other in medicine by Dr. Morgan. This curriculum has been gradually enlarged until to-day it contains a list of twenty-three subjects and the hours of instruction have been increased from a total of 120 to a total of about 4,000, the instruction extending over a period of four years.

Second.—In that same medical school, the entrance requirements decided on by the resolution of the trustees, May 27, 1767, were as follows:

> 1. It shall be required that such students as have not taken a degree in any college shall, before admission to a degree in physics, satisfy the trustees and professors of the college concerning their knowledge in the Latin tongue, and such branches of mathematics and natural and experimental philosophy as shall be judged requisite to a medical education.[1]

One of the four propositions quickly agreed on at the first meeting of what afterward became the American Medical Association in New York in 1846 was that "It is desirable that young men being received as students of medicine should have acquired a suitable preliminary education."

Third.—Notwithstanding the improved standards in the medical curriculum, little that is creditable in the way of raising the entrance requirements has been done by the majority of the medical colleges of the United States. In many instances they are lower than in the Philadelphia Medical College one hundred and forty years ago. Pedagogically and from the standpoint of the needs and rights of the people, the weak spot in our medical educational plan is that of entrance requirements. They are too slow and the medical colleges themselves are permitted to pass on their character. Even the entrance requirement of a high school is too low.

Fourth.—On the other hand, the greatly increased demands of the medical colleges make a college course of four years a longer time than the future physician needs to spend, in preparation for his medical studies. The report of the Associated Harvard Clubs, page 8. 1905, says:

> European experience all indicates that where secondary schools are highly organized and well conducted, and professional education amply developed, four years of liberal study can not be maintained between the school period and the period of professional study.

Again, in their report of May 26, 1906, page 8, the committee says:

> Even a cursory examination of the discussions on this subject discloses the fact that there is practical unanimity in this conclusion: That the period of four years between the second-

---

* Report of Committee to the National Confederation of State Medical Examining and Licensing Boards, June 4, 1906.

1. Packard's "History of Medicine in the United States," p. 199.

ary and the professional schools is too long and that the requirement for the four years' course for the A. B. degree, if continued, will result in the exclusion of the holders of that degree from the so-called 'learned professions.' The four years' course is doomed. Indeed, it is already disappearing through natural causes, the effects of which can not be avoided to the extent of saving or restoring the four years' course.

Fifth.—The mass of the poorer or even middle class medical colleges will adopt no higher standard of entrance requirements than those imposed by the examining boards. This question of entrance requirements will never be solved by the medical colleges and the medical associations, partly for pecuniary reasons, and partly because the college associations persist in going about it in the wrong way. For example, the president of the Association of American Medical Colleges, in his annual address at the meeting at Pittsburg, Pa., March 19, 1906, still harps on that constitutional impossibility, a national board, as the panacea for all our medical educational ills. He says:

> The inconsistencies of many of our state laws controlling the practice of medicine and surgery lead us to a demand for national laws that would abrogate the present irregularities and bring about a uniform educational standard, acceptable to every examining and licensing board in the United States. To further this end, I solicit the indorsement of this association that such a national board be created from delegates sent from each state and territory.

It seems unnecessary, and in this body it is unnecessary to repeat that everything relating to the whole subject of medical education, including preliminary entrance requirements, the license and control of the practice of medicine, belongs to the state; its regulation and control is an exercise of the general "police power" of the state; it is one of the state's rights with which the federal government has nothing whatever to do.

The state board of health, or the examining or licensing board in each state, is, in view of the authority vested in it by the legislature, the only body authorized to determine the condition or terms under which physicians are licensed to practice in that state. This body determines the character of the entrance requirements, the length and character of the medical course, the subjects embraced in the medical curriculum, the time to be devoted to each, the character and scope of the examination, the equipment of the medical college in order to be in "good standing" with the board. The state alone, each for itself, through its examining board, has the sole right to establish and to maintain medical educational standards.

ATTITUDE OF EXAMINING AND LICENSING BOARDS.

Clothed with the power and charged with the duty of establishing, maintaining and enforcing reasonably high educational standards in the interests of higher education and of the rights of the people, what are we as examining and lincensing boards going to do in regard to this all important question of entrance requirements? Are we going to do as has been done in the past, wait, and "play safety" and progress no faster and no farther than we are forced by popular demand, or are we going to accept the other alternative, that of leadership, recognizing an educational and public need before it becomes a demand, perceiving the signs of the times, interpreting correctly "the handwriting on the wall," acting vigorously and fearlessly in the right as we see the right, in the strength of a faith which we feel sure will be justified by future results. Something should be done and done soon. The only question is, shall we act, here and now, or shall we wait and act in harmony with the organized profession, of the American Medical Association through its Council on Medical Education. It is for you to decide.

MINIMUM ENTRANCE REQUIREMENT.

We believe, and therefore recommend, that the following should be adopted as the minimum preliminary entrance requirement[2] to the study of medicine. We also recommend that the confederation work in harmony with the Council on Medical Education of the American Medical Association, the American Confederation, the Association of American Medical Colleges and all committees and organizations of all legally authorized schools of practice.

1. A high school diploma from a recognized high school, or its equivalent in the form of a certificate showing that the applicant has passed a satisfactory examination in all the branches usually embraced in the curriculum of a four-year high school course, said certificate to be either issued or passed on by some designated state official, such as the superintendent of public instruction, and not by any one connected with any medical college.
2. Satisfactory documentary evidence of having completed at least one year of not less than nine months' of work in chemistry, biology, physics and languages in either a recognized institution of learning chartered to confer liberal degrees, or in a recognized medical college, having a special additional year devoted exclusively to the above subjects, this requirement to apply to all students matriculating after Jan. 1, 1910.

In the foregoing I have used the term "year of work." Following the important suggestion made by Dr. B. D. Harison, secretary of the Michigan Board of Examiners, something should be done to improve and render uniform our terminology in describing and defining work. As I understand it, the following terms are in use. The term "count" is used by New York, meaning one hour each week of class room work throughout the college year. The term "point" is used by the Association of American Medical Colleges, meaning thereby two recitations each week throughout the college year. The term "course" is used at Harvard, meaning three hours each week. The term "unit" is used by the Michigan board and by the Michigan university and means four hours each week throughout the year. To recapitulate: "Count" equals one hour each week; "point," two hours each week; "course," three hours each week and "unit" four hours each week. All mean a certain definite number of hours. Then why not say so. But if any term other than the word "hour" or "hours" is used, let it be the New York "count" because of its age and simplicity.

THE TREATMENT OF EMACIATION.*

L. BREISACHER, M.D.
Professor of Clinical Gastroenterology, Detroit Medical College; Consulting Gastroenterologist, Harper Hospital.
DETROIT.

Almost daily, persons consult me whose one great sorrow in life is their condition of leanness or emaciation. They come to me with the request that I make them fat and plump.

A few of these persons are actuated in their request by the knowledge that their bodily strength and resistance have suffered as the result of their abnormal weight reduction. Others again recognize that their leanness is the expression of some digestive or metabolic disorder. With the great majority of persons, however, these matters are left out of consideration, their sole desire in wishing to become fat being to improve their personal appearance. The first writers who ventured on the subject of the treatment of leanness recommended that the individual be liberally fed, and with this advice we are indeed in the fullest accord, but, like almost all writers up to the present time, they have ignored the causes and the accompanying conditions of this difficulty.

---

[2] This standard was unanimously adopted at the Boston meeting, June 4, 1906, and by the Illinois State Board of Health, June 20, 1906.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Chapter on chapter has been written by dietitians on food values, fat producing foods, the possibility or impossibility of forced albumin feeding, etc., in reference to the treatment of leanness, but the underlying causes and a thorough consideration of the digestive and absorptive factors as well as the significance of medical treatment, have been entirely ignored.

CAUSES.

Leanness may be the result of various causes. It may be of an apparently hereditary character, or it may be acquired and arise as a primary or secondary condition. The one great cause of leanness excluding diseases like tuberculosis, diabetes, nephritis, and cancer and conditions like stenosis and vomiting, is the ingestion of an insufficient amount of food. This may result from a primary or secondary loss of appetite or a repugnance to food in consequence of various disorders, or as the result of emotions like pain, grief, sorrow, etc. It may be the result of faulty dietetic habit which I have seen handed down through several generations in a number of families.

Frequently it results from an ignorance of the nutritive significance of particular foods, or from the effect of eating but one or two meals a day by persons not constitutionally fitted for that sort of régime. It may be the result of poverty or the attempt to economize. It may be due to sexual neurasthenia, hysteria and nervousness, especially in persons of a typically nervous temperament.

These latter causes together with digestive abnormalities have formed the basis of the great majority of cases of emaciation which have come under my observation. In an interesting paper, recently published, Cabot mentions arteriosclerosis and sleeplessness, which latter condition I have often noticed, at least as an accompaniment of other symptoms, in a number of my cases.

To the second group of causes belong the gastrointestinal disorders which may be either of mechanical, chemical or secretory origin. I have observed them as a primary or secondary cause in almost all of my cases. There is no doubt whatever that the foundation of this class of diseases, with the frequently resulting emaciation, is often laid at the time of the birth of the child when it is artificially instead of naturally fed. We may further add to this list of diseases producing leanness all the circumstances in general which produce digestive disturbances.

As causative agents in the production of leanness, I might also mention the improper metabolism of food and the increased oxidation of food after it has become an integral part of the blood. We can not define these conditions, however, with any degree of precision, and it is not our object in this place to enter into a speculative consideration as to the possible nature of these conditions.

It will thus be seen that many circumstances and conditions, either singly or combined, may operate in the production of leanness. Cases may belong to that class which we may ascribe to hereditary influence, and which result from habitual underfeeding which I have noticed in successive generations of different families; cases of apparently simple or primary leanness may, on examination, be found to rest on some undoubted physical or nervous basis.

TREATMENT.

In the treatment of this condition it behooves us, therefore, to examine our patient thoroughly, and an examination is incomplete unless the state and degree of digestive activity have been accurately determined. One should know to what degree the stomach and bowels will bear forced feeding and what foods these organs will most readily digest and absorb. The selection of the kind and quantity of food and the determination of the quantity of liquids depend on these examinations.

With the absorptive and digestive activity of the stomach determined, and all other possible causes considered, I map out a diet list which will contain from 2,200 to 2,500 calories and gradually increase the amount until I reach a diet containing from 3,800 to 4,500 calories.

I strive to give from 100 to 250 gm. of fat in the form of milk, cream, butter, olive oil or emulsion; 100 gm. of fat equal 930 calories, 250 gm. equal 2,325 calories, If we add sufficient albumin containing food to amount to 150 gm. and carbohydrates amounting to 400 gm., the caloric value will be increased to 615 and 1,640, the entire caloric worth amounting to 4,580 calories. Thus:

Fat	250	×	9.3	=	2,325
Albumen	150	×	4.1	=	615
Carbohydrates	400	×	4.1	=	1,640
					4,580

The question as to how much or how little albumin is to be selected and the nutritive value of the different naturally and artificially digested foods I have discussed in former publications and need not repeat in this article.[1]

I always resort to tonics, both vegetable and mineral, given either hypodermically or by the mouth, and, when the occasion demands, I push them to their physiologic limit. In nervous individuals, I always use nerve sedatives, never of course resorting to narcotics of any kind. The medicinal list includes iron, arsenic, gold, manganese, strychnin, gentian, cinchona, quinin, condurangó, colombo, sumbul, bromid and valerian. I always resort to the tonic, reconstructive, stimulative and sedative, actions of these drugs, which, when combined with properly selected foodstuffs, determine the outcome of the case.

From time to time I estimate the excretory activity of the kidneys, and compare it with the entire water intake, which should be from 2,000 to 3,000 c.c. I lessen or increase the exercise as the case may require, and resort to frequent tepid baths, cold rubs, massage and electricity. On a régime of this kind, convalescents often gain weight so rapidly that it becomes necessary to reduce the diet. The chronically underfed usually require from two to six months of very careful manipulation with the continuous coaxing of the digestive tract, and the constant tempting of the palate to achieve the desired result. Not only for an esthetic effect, but also as a prophylactic and curative means, the logical fattening of individuals is of an importance which can hardly be overestimated.

---

[1] Breisacher: "Principles of Metabolism and Nutrition," Physician and Surgeon, November, 1900; also "Minimal Albumin Requirements in Health and Disease," THE JOURNAL A. M. A., vol. xlv, Dec. 9, 1905; "Artificially Prepared Foods." THE JOURNAL A. M. A., vol. xxxvii, Oct. 26, 1901; "Eiweissbedarf des Menschen," Deuts. med. Wochschr., 1900.

MUCOID SALTS.*

WILLIAM J. GIES.
NEW YORK CITY.

We know practically nothing about the ways in which proteins are held in living protoplasmic structures. The molecules of the protein compounds are relatively so large that as yet our physicochemical methods of measurement are inadequate to give us correct ideas of molecular size and intramolecular structure, although we know considerable about the lifeless and, in some respects, comparatively meaningless fragments into which protein molecules may be broken. Our ignorance of the fundamental biochemic relations of proteins to the associated constituents of protoplasm appears to be largely due to our vague knowledge of the chemical statics and dynamics of true cellular proteins, a fact which serves as a constant stimulus to protein investigation.

Among the many protein substances the nucleoproteins and the glucoproteins are very important tissue constituents. The essential part of each natural type of these proteins, and the part to which the usual name is applied, appears to be a colloidal organic acid. The forms in which the acid radicals occur in cells and tissues have not been definitely made out, although it is natural to presume that the acid radicals are united directly to one or more distinctly basic radicals in each case, and that variations in the characters of such compounds are associated with physiologic as well as pathologic variations of cellular composition and tissue function.

I have endeavored to get to the bottom of this complicated matter, by making definite salts of these proteins with the aid of methods that could be relied on to leave the acid radicals unchanged. In this effort I have been encouraged by the hope that, by increasing our knowledge of artificial products, analogies with natural compounds would be not only more easily recognized, but also the characters and functions of the compounds in living protoplasm would be more thoroughly understood. Thus, at present, it is impossible to recognize satisfactorily the form or forms in which mucoid is contained in the connective tissues under either physiologic or pathologic conditions, nor are we able to explain, for example, the possible relationships of spermatic protamin (basic) and ovular mucoid (acid) to the more differentiated mucoid (acid) so conspicuous in embryonic tissue. I believe that a study of artificial products of such types as those referred to, will make it possible successfully to elucidate numerous problems awaiting solution, many of which my co-workers and myself have under investigation.

About five years ago I found that "when the electric current is passed through neutral or alkalin mucoid solutions (consisting of sodium or calcium salts of mucoids) turbidity results within a short time and flocks eventually form and can be filtered off." This observation was included in a preliminary report of work then in progress.[1] About the same time Huiskamp[2] had been making similar observations in connection with nucleoprotein salts from thymus. Shortly afterward, in preparing material for work in another connection, I[3] precipitated from an alkalin solution (Na_2CO_3) of mucoid with the aid of acetone, after failure with alcohol, a water-soluble compound, apparently sodium mucoid. This fact has not been published hitherto, although it was stated at that time that organic compounds such as gelatomucoid had been obtained.[4]

I have lately prepared calcium, sodium, potassium and ammonium salts of mucoids by the following process: The glucoprotein was obtained in slightly alkalin solution. This solution was dialyzed until neutral and then was poured into a large excess of 95 per cent. alcohol, by which treatment the mucoid was immediately precipitated. Initial purification was effected by resolution, dialysis and reprecipitation. The products were rendered anhydrous by treatment with absolute alcohol and ether. Probably all bases yield such salts, although, for the present, I shall confine my remarks to the simple inorganic salts mentioned.

The comparatively pure inorganic salts of the mucoids already prepared are light, snow-white powders. They dissolve in water very readily and are dissociable products. The concentrated solutions resemble mucus. The aqueous solutions are neutral to litmus and acid to phenolphthalein. Ammonium compounds have been prepared that were acid to litmus also. The calcium salt yields about 12 per cent. of ash, whereas the corresponding mucoid is practically ash-free. It is very probable that the mucins in the secretions occur in the form of such salts, as Müller has already suggested. Yeast nucleoprotein has also yielded similar products. Presumably other nucleoproteins will be found to do so also.

I believe these observations clear the way for important discoveries connected with the glucoproteins, nucleoproteins, proteinates and similar protein products. The best method of preparing the compounds referred to has not yet been definitely ascertained, but I hope to describe it in detail at an early date.

EXPERIMENTAL CEREBROSPINAL MENINGITIS AND ITS SERUM TREATMENT.*

SIMON FLEXNER, M.D.
NEW YORK CITY.

Cerebrospinal meningitis prevailed as an epidemic in Greater New York City during the winter of 1904 and the spring of 1905. Since that time up to the present writing, sporadic cases of meningitis still arise. In the spring of 1905 the Health Department of New York City appointed a commission to co-operate with the department in investigating the epidemic. As a member of the commission I undertook an experimental investigation of meningitis out of which the preliminary report has grown. The full report of this investigation will appear in a forthcoming number of the *Journal of Experimental Medicine.*

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

*From the Laboratory of Physiological Chemistry of Columbia University, at the College of Physicians and Surgeons, New York City.

1. Mead and Gies: Am. Jour. of Physiol., 1902, vol. vi (Proc. Am. Physiol. Soc., 1901, p. 28); also Gies and collaborators: "Biochemical Researches," 1903, vol. i, p. 53.

2. Huiskamp: Zeits. f. physiol. Chemie, 1901-02, vol. xxxiv, p. 32.

3. Gies: Am. Jour. of Physiol., 1903, vol. viii, (Proc. Am. Physiol. Soc., 1902, p. 13); also "Biochemical Researches," 1903, vol. i, p. 54.

4. Gies: Loc. cit.; also, Posner and Gies, Am. Jour. of Physiol., 1904, vol. xi, p. 404.

* From the Rockefeller Institute for Medical Research, New York.

The bacteriologic examination of the exudates from the meninges, obtained by lumbar puncture and at autopsy, showed the epidemic to be caused by *Diplococcus intracellularis* of Weichselbaum. My work was done almost entirely with this micro-organism. The sources of my cultures were the following: Dr. E. K. Dunham, Dr. Martha Wollstein and Dr. E. P. Bernstein. From Dr. Dunham I obtained a large number of cultures which he isolated from cerebrospinal fluid and the nasal mucous membrane of patients; from Dr. Wollstein I obtained cultures isolated at the Babies' Hospital, and Dr. Bernstein supplied me with cultures from patients at Mt. Sinai Hospital. In a few instances I made my own isolations from freshly-drawn cerebrospinal fluid. The large number of cultures of the diplococcus, or similar organisms, which were examined could not all be tested on animals. The biologic characters of a larger number of cultures than could be tested for their pathogenicity were studied. *Diplococcus intracellularis* possesses biologic characters which permit of its identification with a high degree of certainty. The cultural appearances on the usual media, temperatures of development, actions on sugars and brief viability, under ordinary conditions, all tend to distinguish the intracellularis among the wide group of non-Gram-staining diplococci. The brief vitality of many cultures of the intracellularis is a point of high differential importance. Many strains, grown on a favorable medium, unless transplanted to a fresh medium, do not survive beyond two or three days. Indeed, these transplantations do not succeed, frequently, unless considerable quantities of the growth are carried to the fresh tubes, an indication that only a fraction of the cocci have survived, or are still capable of multiplication. Vigorous fresh cultures of 16 to 24 hours' growth stain sharply and uniformly. On the second day the cocci show irregularities in staining and size, unless they have been carefully preserved from evaporation and fluctuations of temperature. Cultures three days old show marked degenerations, and these increase rapidly with age until, at the end of five or six days, no normal cocci persist. Even with very careful preservation the great majority of the cocci do not survive beyond this brief period. A few cocci, in carefully preserved cultures, may survive for many months. The appearance of old cultures is characteristic. At the beginning of the degeneration swollen-deeply-stained cocci occur among the smaller but usual forms, which take the stain less intensely than fresh cultures. As degeneration progresses loss of nuclear-staining and disintegration occur, until, finally, staining power is entirely lost and a formless detritus remains.

If a vigorous culture of the diplococcus is suspended in 0.9 per cent. salt solution and the suspension is kept at 37 degrees C., the cocci slowly undergo the changes described. Since in such a fluid medium evaporation goes on slowly and alterations in concentration are consequently small, the cocci degenerate less rapidly than when grown on the surface of solid media. Finally, the salt suspension of cocci also degenerates. If, however, to such a salt suspension a few drops of toluol be added and mixed with the fluid by agitation, the process of disintegration is greatly accelerated. Such a suspension, kept at 37 degrees C., may be wholly disintegrated at the expiration of 24 hours. The conclusion which may be drawn from this observation is that *Diplococcus intracellularis* possesses a highly potent autolytic ferment which tends, once the cocci are dead, quickly to cause disintegration of the micro-organisms. I noticed repeatedly when I transplanted thick suspensions of old cultures to fresh media that the turbid fluid became clear after a few hours, indicating solution of the bacterial substance in the new fluid used to dilute the original growth. I made some comparisons of the rapidity and degree of disintegration of the cocci which take place when the salt suspensions of cocci are toluolized and occasionally agitated and when they are not killed outright, but are shaken continuously for several days. The disintegration is much more rapid and complete in the toluolized specimens. The autolytic ferment is destroyed by heating the suspensions to 65 degrees Centigrade.

This great susceptibility of *Diplococcus intracellularis* to changes in osmotic conditions, and possibly to variation in temperature and accumulation of products of growth, separates it from a large number of non-Gram diplococci of various origins. The slight vitality of the diplococcus is bound up with this susceptibility. I noted the fact, at the beginning of my experiments, that cultures placed on ice might be dead in less than 24 hours. Later I made a few experiments on the viability of the cocci in thick, salt solution suspensions kept in a refrigerator the temperature of which varied from 2 to 4 C. In this case many living cocci were still present at the end of five days.

I secured a considerable number of non-Gram diplococci from human beings and animals which differed from *Diplococcus intracellularis.* Some of the former came from the nasal cavity of persons, children chiefly, suffering from epidemic meningitis. Others came from healthy persons who had not been exposed to cases of meningitis. A few cultures of so-called *Micrococcus catarrhalis* were sent me by other bacteriologists. In connection with the investigation of the Department of Health I had my assistant, Mr. Ward, study a number of domestic pets—cats and dogs—obtained from the houses in which cases of meningitis occurred. Several of these animals yielded cultures of diplococci which were decolorized by Gram's staining method. An autopsy on a case of cerebrospinal meningitis, the child having died in the sixth week of the disease, yielded a non-Gram diplococcus which belonged to this group. A few colonies of the coccus were obtained from the bronchial lymph glands, lungs, antrum and medulla oblongata, the last being covered with a thick exudate. All these cultures differed from the examples of *Diplococcus intracellularis* in not tending to undergo the rapid degeneration and disintegration described for that organism. Associated with this difference were the further differences that they grew from the first on media to which blood in some form had not been added and were viable over a long period of time—often for many weeks. They were, further, either devoid of power to ferment sugars or they possessed wider or more vigorous fermentative powers than the intracellularis.

A toluolized salt solution suspension of *Diplococcus intracellularis* quickly disintegrates, as has been stated. This fluid, deprived of its toluol by evaporation at a low temperature, and centrifugalized at high speed to remove solid particles, is toxic. The toxic constituents pass through unglazed porcelain (Berkefeld filter). The toxic effect of this fluid can best be studied on young guinea-pigs. Selecting pigs of 125 grams weight or less for the test, the degree of toxicity will depend on the strength of the original suspension of cocci. If the entire growth on the flat surface of a one-pint Blake bottle be suspended in a 10 cubic centimeters of salt solution the lethal 18 to 24 hour dose given intraperitoneally will be from 0.5 to 1 cubic centimeter. The lesions which result are similar to those caused by injections of living suspensions of cocci, except that fibrin may not appear.

The activity of this extract can be shown in still another manner. Since Bail's work on aggressins, so-called, and Wassermann's and Citron's observations on extracts of bacteria in promoting infection, we have learned that the pathogenic effect of bacteria may be intensified by combining them with these products. Guinea-pigs which have been inoculated simultaneously with living cultures and the autolysate of the cocci succumb more certainly and are subject to smaller doses of cocci than animals given the cocci alone. Intraperitoneal injections of the diplococcus in guinea-pigs gives rise to the production of an exudate which exerts an action similar to this extract in promoting susceptibility to the coccus.

As tested on laboratory animals *Diplococcus intracellularis* is a micro-organism of low and variable pathogenic action. Small guinea-pigs are, I found, more useful than mice for studying the effects of the cultures. The difference in susceptibility of guinea-pigs, according to weight, is very large. Guinea-pigs of 175 to 200 grams weight proved highly susceptible to the cocci as compared with pigs of 350 to 400 grams weight. Pigs of 250 grams are still useful for these tests, while full-grown pigs are highly refractory.

Not all cultures of the diplococcus, even in the first generations, are pathogenic for the small pigs, unless, indeed, very large quantities be injected. Speaking generally freshly isolated cultures are pathogenic, while cultures grown for a period on artificial media are not. Occasionally a strain of the coccus will retain its pathogenicity for many months, but, as a rule, the power is lost after the first transplantations extending over a few weeks. I have worked with cultures which have deteriorated in a few days, and one culture (Smith) retained its power undiminished for many months, to lose it in the end. This culture was passed through many mice, guinea-pigs, and monkeys during its active period. but, after its activity was lost, it could not be restored by passage through mice and guinea-pigs. It still yields an active extract and can be used as an adjuvant to living cultures. No increase in power was produced by passing it through ten successive generations in a medium consisting of bouillon and serum of a goat immunized to the diplococcus.

The reaction to inoculation, in the guinea-pig, varies with the degree of pathogenic power possessed by the strains of the coccus. In my studies I found it necessary to adopt a standard strength of culture to be inoculated. It was not readily possible to obtain uniform growths on agar-serum surfaces; hence I prepared from the large flat surfaces a suspension in salt solution which had a uniform degree of turbidity. The suspensions should be made from freshly-grown cultures (preferably under 24 hours old) and used soon after preparation. It is unsafe to carry suspensions over until the next day, unless a new determination of their strength be made. Partial deterioration quickly sets in.

The standard dose of the suspension varied, as a rule, from 0.1 to 0.5 cubic centimeter, for the small pigs, by intraperitoneal inoculation, and death occurred in less than 24 hours. Active cultures, in this strength of suspension, may cause death, in the smallest dose given, in 8 to 10 hours. A culture which in a dose of 0.5 cubic centimeter requires 24 hours to kill is one of weak virulence. In the course of any large series of experiments irregularities occur. It has happened that a guinea-pig of a series died in 4 hours and another survived 36 hours. But these irregularities can be ruled out by making duplicate inoculations. Among survivals it happens occasionally that death takes place after several days and is preceded by a state of great emaciation.

The most important lesions exist in the peritoneal cavity. Excluding the two extremes (death in 4 hours or after several days) the appearances and conditions present are uniform. It is the rule for the pigs of a series to succumb in about the same period, within one or two hours of each other. Where the coccus causes death in 12 to 14 hours the results are likely to be very regular. Greater irregularities occur where death is delayed until 24 hours after inoculation.

Fluid exudates into the cavity of the peritoneum are the rule, and more or less fibrin and pus covers the anterior surface of the liver and is present in the rolled up omentum. In gross appearance there is not great distinction between the animals succumbing in 12 and in 24 hours. But microscopic examination shows the difference to be considerable. It is the virulent cocci which bring on the more rapid forms of death. The exudate in this case shows many, often prodigious, numbers of cocci. The appearances are indicative not only of preservation of the injected cocci, but are suggestive of their multiplication. In the case of the less virulent cocci, the exudate contains fewer micro-cocci and may be devoid of them. Even when death occurs in the short period mentioned, the number of cocci is likely to be small. In other words, virulence and resistance to destruction go hand in hand. A relatively non-virulent strain of coccus may still be toxic, but has little or no capacity to resist disintegration and none for multiplication in the peritoneum. Hence two appearances are met with between which transitions occur. When the strain of coccus is actively virulent multiplication in the body probably takes place, but in any case there is only slight dissolution of the injected micro-organisms, and cultures are positive. Death usually takes place early, and it is rarely that a more resistant pig survives beyond the usual period, and even then cocci are still present in numbers. When the strain of coccus is little virulent it tends from the beginning to disintegrate, and, even if the animal succumbs early, the peritoneal cavity may be devoid of micro-organisms, or, should a small number still be present, they often do not develop in cultures. The more virulent cocci invade the blood and tissues and can be cultivated from the blood, internal organs, bone marrow, etc.; the less virulent cocci are not found in the interior of the body.

I have made some observations on the strength of the toxic fluids yielded by different strains of cocci through autolysis, and they indicate that these fluids have not the same absolute strength. The more virulent cocci yield, at times, an autolysate of greater toxicity than the less virulent micro-organisms. In view of the adjuvanting effect of the autolysate it may well be that it is this potent toxic extract which makes the former cocci survive and multiply in the body, for a part of them undergoing dissolution could supply the necessary autolysate to reduce the resistance of the animal. In case of the cocci of small virulence, the lethal action is, according to this view, due wholly to the liberated endotoxin for which larger quantities and longer time are required.

I have made some experiments on the dissolving power of the peritoneal exudate, from guinea-pigs, on the diplococcus. The fluid exudate is removed and freed from cells by centrifugalization. It possesses high digestive powers for the cocci. Mixed with fresh cultures many of the cocci are killed and disintegrated, and the cocci in the mixture which has been toluolized undergo dissolution much more rapidly. Enormous numbers of cocci can be digested by the exudate, which is increased in toxicity thereby. The dissolution of the cocci in the toluolized exudate goes on much more rapidly than in salt solution. The exudate heated to 58° C. for from 30 minutes to one hour has the same digestive action as before on fresh cultures and on cultures heated to 65° Centigrade. It is, therefore, assumed that its action is enzymotic. The blood serum of the guinea-pig has not the power to digest the cocci.

A measure of the reaction of the guinea-pigs is found in the emigration of leucocytes. In the cases of rapid death with preservation of the cocci the emigration is slight or wholly absent, while in the cases of slower death and disappearance of cocci the emigration is considerable. Many transitions between these extremes exist. When emigration is at all marked, even with an almost entire preservation of the cocci, phagocytosis has taken place. Where there has been considerable, although not total, disappearance of cocci, phagocytosis is more abundant. Phagocytosis is a function of emigration, but it is not a measure of this condition. The disappearance of the cocci from the peritoneal cavity does not depend wholly on phagocytosis. I believe that the cocci may be removed without the intervention of phagocytosis, probably through self-digestive action and digestive action of the inflammatory exudate.

The leucocytes are numerous, frequently, in the omentum and every fibrinous exudate, while they are few in number in the peritoneal fluid. The clear peritoneal fluids contain few leucocytes relatively; the turbid fluids contain many. Since the turbid fluids occur in animals surviving the longer periods, there is relation between degree of virulence and emigration. But since the emigration is more abundant in those animals in which the cocci quickly disintegrate, it would not seem to be wholly called forth by the need for phagocytosis. The toxic extracts of the cocci cause fluid exudations into the peritoneal cavity, but not turbid ones, so far as I have seen. Possibly fragments of the bacterial bodies present in injections of cultures and absent from centrifugalized and filtered autolysates attract many leucocytes. The leucocytes of the omentum are large and pale, and those of the peritoneal fluid small and dense. Their nuclei are often irregular in form or fragmented. Cocci are common in the protoplasm and rare in the nuclei, and they show all transitions from well-preserved organisms to fragments and swollen, metachromatic bodies.

The main visceral lesions met with in the pigs are (1) vivid congestion or hemorrhages of the adrenal glands; (2) hemorrhages into the mesentery and central tendon of the diaphragm; (3) gelatinous edema of the pancreas and peripancreatic tissues.

At the beginning of this investigation I had the plan of using monkeys to reproduce the lesions and symptoms of cerebrospinal meningitis in man. Some of my earliest experiments were made on these animals. The cultures were introduced into the spinal canal by means of lumbar puncture. The injection was made commonly in the canal at the level of the third lumbar space. This space is not below the level of the cord in many monkeys, but I have never had paralysis follow my inoculations. My first experiments were successful in producing acute leptomeningitis from which the animals died. The symptoms in different animals were depression, coma, convulsions, nystagmus, opisthotonos, etc. The experience which I was obtaining with guinea-pigs was of much use to me in the work on monkeys. The variable virulence of the cocci affected, at the beginning, the successful experiments with monkeys, as it did with guinea-pigs. By choosing suitable strains of the coccus I succeeded in inducing severe and fatal leptomeningitis in a large number of monkeys. Through the use of lumbar puncture, in the course of the disease, I studied the manner of reaction of the animals and the fate of the micro-organisms. I shall give in this place the protocol of my first experiment on monkeys, since it represents a typical case.

Macacus nemestrinus, May 12, 1905, 10:30 a. m. A good-sized monkey was etherized,[1] after which a needle was introduced into the spinal canal; clear, watery fluid escaped from the needle. A culture eighteen hours old of the *Diplococcus intracellularis*, in its first generations, on Loeffler's serum, was injected. The culture consisted of many discrete colonies and had been suspended in 2 c.c. of salt solution. The monkey quickly recovered from the operation. Six hours later it appeared to be sick; at 6 p. m. it no longer sat on its perch; 9 p. m., still on bottom of cage; head down, appeared very sick; on being disturbed it moved slowly. Death during the night. Survived injection probably eighteen to twenty hours.

Autopsy, 9 a. m., May 13: The internal organs, except the nervous system, showed no striking lesions. Brain and cord: No marked excess of fluid in the meninges. Convex surface of the brain greatly congested, punctiform hemorrhages in the pia arachnoid and superficial portion of the cortex. No definite exudate on the convex surface of the convolutions, although the pia of the sulci appeared white and slightly thickened (probably an old condition). A focus of softening, or an abscess, the size of a large pea occurred to the right of the superior longitudinal sinus in the convolutions anterior to the motor area and just beneath the membranes. The base of the brain was covered with an opaque exudate, white in color, which extended over the medulla and anteriorly to the optic commissure. The lumbar and thoracic portions of the spinal cord were covered, posteriorly chiefly, with an opaque, white exudate. The diplococcus was recovered in cultures from the exudate of the spinal cord and base of brain and from the blood of the heart. Smear preparations from the exudates showed large numbers of polymorphonuclear leucocytes, many of which contained the diplococcus, and they showed diplococci lying free in the exudate, The softened focus contained masses of leucocytes and enormous numbers of the diplococci. The microscopic examination of sections of the inflamed brain and cord showed the existence of an acute fibrino-purulent exudate within the pia arachnoid and a superficial encephalitis.

By means of this and later experiments it was shown that the lower monkeys could be infected without great difficulty with *Diplococcus intracellularis* and made to reproduce the pathologic conditions present in man in epidemic cerebrospinal meningitis. The experiments proved that the cocci, when introduced into a low level of the spinal canal, would distribute themselves in a few hours through the meninges and excite an inflammation, the exudate of which accumulated chiefly in the spinal meninges and the meninges of the base of the brain. The uniformity with which the chief exudate was found at the base of the brain and the rarity of its appearance in considerable amounts over the convexity led me to doubt the validity of the reasoning which ascribed this localization in man to the entrance into the meninges of the infective agent directly through the nasal mucous membrane. This tendency to localization at the base of the brain in monkeys is especially interesting in view of the fact that it is usually only a short time before death that they lie down on the side. In comparing the experimental lesions in the monkey with the naturally developed lesions in man note should be taken of the occurrence, under both conditions, of encephalitis and of abscess formation, due to the invasion of the substance of the nervous tissue by the diplococcus.

---

[1] In later experiments ether was not used, since the operation gave little pain.

In contrast to the ease with which the acute inflammation can be excited is the difficulty which attends the production in the monkey of a subacute form of meningitis. The intraspinal injections produce either an acutely fatal meningitis or an acute disease from which recovery takes place rapidly. The animals which survive inoculation are usually well of the disease in three or four days. In rare instances the animal lingers a victim of the disease for a longer period than this to succumb in the end. Monkeys which survive the second day after inoculation tend rather to recover than to die. By following in inoculated animals the changes in the spinal canal by means of lumbar puncture, the progress of the infection can be traced and the final result often predicted. There is much similarity between the changes occurring in the spinal canal of monkeys and those in the peritoneum of guinea-pigs. The most striking difference is the greater degree of phagocytosis that takes place in the spinal canal, although the cocci are not all removed in this manner and the same difference in resistance to destruction, depending on virulence, is found in both animals.

Disappearance of cocci early from the spinal canal is a good sign; early emigration of leucocytes is also a good sign; early emigration, active phagocytosis and dissolution of the cocci, both within and without the leucocytes, are very favorable signs. And just as in the guinea-pig death may take place in spite of the entire disappearance of cocci from the peritoneum, the monkey may succumb, although cocci cannot be found either in smears or obtained in cultures from the inflamed membranes.

By following in this manner the results of inoculation I have been able to keep a small number of monkeys in a state of subinfection for several weeks with the diplococcus. The period of successive inoculating was determined by the puncture and by the physical condition of the monkey. A state of resistance tended to develop, which necessitated the use of increasing amounts of cultures to produce visible effects, and in the end the rundown animal succumbed—usually from an inoculation with an overdose of cocci. In these animals the exudates were thicker and firmer, and covered the base and convex surface of the brain. The ventricles were widely dilated and contained turbid exudate.

Although the pathologic effects produced in these monkeys are comparable to those occurring in the natural disease in man, there is no real correspondence in the relative susceptibility to *Diplococcus intracellularis.* The quantity of an active culture required to cause marked symptoms or bring about death from meningitis in monkeys is prodigious if compared with what probably happens in the human infection. Moreover, the amount of multiplication of the cocci in monkeys is, under the most favorable conditions, small, and I am disposed to think that in many of the experiments no multiplication whatever took place. In the case of abscess formation I believe multiplication of the cocci to occur. Experiments are in progress to determine to what extent the symptoms and lesions of meningitis can be produced by means of the soluble poison yielded by the cocci.

The inflammation of the meninges extends in monkeys into the membranes covering the olfactory lobes, and, as I have made out by means of smear preparations, into the ethmoid cells and into the nose. The nasal mucous membrane is found, in some instances, to be inflamed and beset with small hemorrhages. Smear preparations have shown me polymorphonuclear leucocytes, often in large numbers, carrying diplococci, which presented the form, size, staining qualities and degenerations of the cocci occurring in the same cases in the cerebral and spinal meninges. I failed in two attempts to cultivate the cocci from the nose, owing possibly to the extraneous bacteria present. On account of the bearing which the passage of the diplococci from the meninges into the nose would have on the epidemiology of meningitis, it is intended to repeat the effort at cultivation of the cocci from the nasal passages.

Notwithstanding theoretical discouragements, an investigation of the influence of antisera on the experimental infections with the diplococcus was undertaken. I assumed that the main pathologic phenomena played themselves out in the localities in which the cocci were injected, and hence as the sera could be brought directly into relation with the foci of infection, possibly a benign effect might be excreted.[2] I was influenced, too, by the consideration that in man the chief organic lesions of epidemic meningitis are present in the meninges, and appear only later, possibly, in the brain and cord, and in many cases the bacterial development is not very great. There was another consideration to be taken into account, for if the experimental disease in the monkey could be arrested by the injection of antisera into the spinal canal, and it proved that no ill effects followed the injections, the advisability of making similar injections might be thought of, possibly, even in human beings suffering from cerebrospinal meningitis.

The experiments with antisera, the results of which will be briefly given, were more satisfactory than I had expected they would be. They do not, however, represent conclusions, but merely the beginnings of an investigation into this important and difficult field of study.

The antisera were prepared in rabbits, goats and large monkeys. The rabbits were injected with single strains. the goats with many strains of cocci. The monkeys were injected with cocci and exudates (aggressin) from the peritoneal cavity of guinea-pigs. The rabbits proved poor animals for the work, as they developed hypersensibility to the injections, from which many died. They had the further disadvantage of yielding small quantities of serum. The goat proved a satisfactory animal to immunize, since it bore the injections well and developed an agglutinating serum in a relatively short time. The early experiments showed that rabbit serum was very poisonous for guinea-pigs when injected into the peritoneum in doses above 0.5 c.c. The first tests of the protective powers of the goat's serum were made with the serum obtained at the bleeding on Nov. 18, 1905. The guinea-pigs were of 250 gm. weight. Serum injections were made (1) twenty-four hours before the cocci were injected, and (2) simultaneously with the injection of the cocci. The pigs receiving the serum survived; the control pigs died. The quantity of goat's serum used was 1 c.c., and the injections were made intraperitoneally or subcutaneously; the cocci were injected into the peritoneal cavity. The next test of the serum was made three days later. The serum was given again subcutaneously and intraperitoneally, and, besides the ordinary controls, a set in which bouillon was injected was also employed. The cocci were injected thirty hours after the serum and bouillon. The control pigs, including those given bouillon, died during the night. The pig given 0.1 c.c. of the serum into the tissues of the back died in about the same time. The pigs which received 0.1 c.c. of serum intraperitoneally and 1 c.c. subcutaneously survived. The next experiment to be reported was made Feb. 26, 1906, with the serum of a rabbit injected with the diplococci and guinea-pigs' aggressin. The control pigs died in from fourteen to seventeen hours. The antiserum was given simultaneously with the cocci, and the pigs receiving 0.1 c.c. intraperitoneally and 0.5 c.c. subcutaneously survived, while those given 0.5 c.c. intraperitoneally and 0.1 c.c. subcutaneously survived longer than the controls, but finally died. Thus it is seen that by preceding the injection of cocci with a prophylactic dose of serum, or by injecting serum and cocci simultaneously, the lives of the guinea-pigs can be saved. Dosage of rabbit serum is important. Too little serum fails to protect, and too much serum, at least in case of rabbit serum, prejudices the result by reason of its own toxicity. Therapeutic tests were made with antiserum from the rabbit, with the result that some pigs were saved with a dose of 0.5 c.c. one hour after infection. When this dose was exceeded the serum poisoning accelerated the fatal action of the cocci. After several months' additional injection of the goat its serum was again tested. The bleeding of March 14, 1906, was used in the subsequent experiments. This goat's serum was found to be certainly protective by simultaneous injection in doses of 0.1 c.c. and variably protective in doses of 0.02 to 0.01 c.c. It was also effective as a therapeutic application when given intraperitoneally in a dose of 0.1 c.c. two hours and four hours, respectively, after injection. Infected pigs could not be saved by means of subcutaneous injections of even larger quantities of serum after the lapse of several hours. The difference which the time interval makes is shown by the loss of weight (25 per cent.) suffered by the pig treated four hours after infection.

---

[2] It is now known that the diplococcus appears in the circulating blood in epidemic meningitis. It is noteworthy that the diplococcus invades the blood from the spinal canal in inoculated monkeys.

The first test of the goat's serum on the monkey was made on Dec. 2, 1905. Two spider monkeys (South American) were inoculated at 12 o'clock noon with cultures of the diplococcus. At 3 p. m. the same day one was given 2 c.c. of the serum into the spinal canal. Both animals became very sick; the control monkey finally recovered and the treated monkey succumbed during the night. The serum-treated animal became rapidly worse after the serum injection, showing the ill effect of the injection. The lesions found at autopsy were very severe and of a character which was taken to indicate that goat serum can not be injected with impunity into the inflamed spinal canal of the monkey.

Two large monkeys (*Macacus nemestrinus*) were immunized, as stated, for the production of an homologous serum to be tested chiefly on monkeys by intraspinal injection. Injections of diplococci and of exudate (aggressin) from guinea-pigs were made during a period of nine months. The animals were bled June 15, 1906, and the serum tested. A series of five monkeys (*Macacus rhesus*) was treated with the serum, a control animal having been inoculated in each case. These experiments will be given in brief form. The control monkeys for each experiment succumbed. Before giving the protocols of these experiments it should be stated that, with one exception, the same strain of coccus was employed. It was found that of the standard suspension 0.5 c.c. caused death in about fifty hours and 1.0 c.c. in twenty-two hours. For the serum tests the larger dose was used.

Experiment, July 3, 1906: Medium-sized *Macacus rhesus* given at 11 a. m. 1 c.c. emulsion of diplococcus No. 596, together with 1 c.c. of monkey antiserum No. 1. Fluid flowed from the needle before injection. July 4, 9 a. m., monkey appears normal, active, on perch. Lumbar puncture yields several drops of faintly turbid fluid, which shows on cover slips free diplococci and leucocytes in moderate numbers, some of which contain diplococci, staining poorly. Cultures from the fluid negative. July 5, 11 a. m., monkey apparently well. Lumbar puncture gave a small amount of clear fluid, which contained neither leucocytes nor cocci. Cultures negative. July 10, the monkey remains well.

Experiment, July 5, 1906: Medium-sized *Macacus rhesus* given 1 c.c. suspension of culture No. 596 at 11:45 p. m. Fluid flowed from needle before injection. At 2 p. m. the monkey was sick. Lumbar puncture gave a small quantity of rather thick, opaque fluid. One cubic centimeter of immune serum injected rapidly. Immediately at conclusion of injection pressure symptoms of an alarming character developed. The animal was prostrated for two hours, after which it slowly got better. At 6 p. m. it responded to disturbance. At 8 a. m. next day the monkey was up and appeared well. It remained so subsequently. The cover slips from the exudate of the lumbar puncture showed many polymorphonuclear leucocytes and a small number of lymphocytes, many extracellular and a few intracellular diplococci.

Experiment, July 13, 1906: Moderately large *Macacus rhesus* given at 11:15 a. m. 1 c.c. emulsion of coccus No. 596. Although no fluid was obtained, the canal was certainly entered; 4 p. m., animal sick; 5 p. m., depressed, but still sits up. Lumbar puncture gave a small quantity of turbid fluid, but during the operation the animal collapsed; 1 c.c. of serum injected slowly. The monkey was watched until 10 p. m.; no progress of the disease. July 14, 10 a. m., animal appeared well. No future symptoms developed. The fluid obtained by lumbar puncture showed many leucocytes with an occasional intracellular coccus, and extracellular cocci.

Experiment, July 27. 1906: At 8:45 a. m. a medium-sized *Macacus rhesus* was given one full agar slant culture No. 610, eighteen hours old, suspended in salt solution, into spinal canal. Fluid obtained before injection. At 11 a. m. 5 c.c. of antiserum from monkey No. 2 was injected into the skin of the thigh. Before the serum injection the animal was sick; it lay half down on the bottom of the cage. No immediate effect followed from the injection, but the symptoms did not progress. The next day the animal appeared well. Lumbar puncture was unsuccessful after the injection until the next day, at which time clear fluid, containing neither cocci nor leucocytes, was obtained. The control for this monkey was a much smaller and weaker monkey of the same species, which succumbed in eight hours.

I do not regard this experiment as entirely free from doubt, but as I was unable to obtain more monkeys at this time the experiment could not be repeated.

This series of experiments was, up to this point, successful. But I must record a failure under conditions which, in view of the foregoing successful tests, was wholly unexpected:

Experiment, July 20, 1906: Medium-sized *Macacus rhesus* given at 12 m. 1 c.c. of emulsion of coccus No. 596; 3 p. m., 1 c.c. of antiserum injected intraspinally. This monkey was sick when given the serum and the symptoms progressed fairly rapidly. At 11 p. m. the animal was much prostrated and sat in the cage with head depressed. It died about 7 a. m., July 21. The autopsy showed a very unusual amount of exudation in the membranes of the cord. Cover-slip preparations showed a purulent exudate with large numbers of cocci, all of which were within polymorphonuclear leucocytes. The exudate in the meninges of the brain and cord showed the same condition of complete phagocytosis, although the number of leucocytes and cocci was smaller. The fluid withdrawn by lumbar puncture before the serum injection contained large numbers of diplococci and very few leucocytes; an occasional leucocyte contained diplococci. Cultures from the meninges of the cord, medulla and cortex and from the lateral ventricle were positive; those from the heart and bone marrow of the femur were negative.

In describing the characteristic lesions in the guinea-pigs the occurrence of hemorrhages in the mesentery, diaphragm and adrenals were noted. It was found that the antiserum prevented the appearance of these lesions, even when they failed to save the inoculated pigs. The immune serum from the monkey was effective in the guinea-pig, although this serum possesses apparently greater native toxicity for guinea-pigs than goat serum.

The experiments here briefly described have, possibly, some value in aiding us to understand better the manner in which *Diplococcus intracellularis* brings about its peculiar effects in human beings. They would also seem to show that the diplococcus is an organism possessing highly interesting and very peculiar biologic properties. The special experiments dealing with the prophylactic and therapeutic properties of antisera prepared from the diplococcus are sufficiently encouraging to be more widely and closely studied. In how far the results obtained on guinea-pigs and monkeys can be applied to the prevention and treatment of cerebrospinal meningitis in man it is not safe to predict. Should further experiments show that subcutaneous or intravenous injection of antisera can modify favorably the experimental disease in monkeys, the case would be not without hope. I do not think that the injection into the spinal canal of man of alien sera should be undertaken until their physiologic action has been worked out in more detail in monkeys. Were it practicable to employ monkeys for producing the antisera to be used in man, the danger of serum intoxication might be lessened, while the good effects of the immunity principles were retained. It is my intention to continue the studies already begun along these lines.

TUMORS OF THE CAROTID GLAND.

W. W. KEEN, M.D., LL.D.
Professor of Surgery, Jefferson Medical College.
and
JOHN FUNKE, M.D.
Demonstrator of Morbid Anatomy, Jefferson Medical College.
PHILADELPHIA.

(Concluded from page 479.)

PATHOLOGIC PART BY DR. FUNKE.

A knowledge of the normal gland would facilitate the study of the tumors arising from the carotid gland, but the lack of this information has led to the existing confusion with regard to the classification of the neoplasms. Then, too, the obscure embryology adds to the confusion.

EMBRYOLOGY.

In 1881 Stieda[23] attempted to enlighten us on this question. He found a triangular cell collection connected by means of a fine fibrous strand with the mouth epithelium on the one hand and with the thymus gland on the other. In embryos of 36 mm. the cell collection was round and no longer connected with the structures just named. The cell collection, he holds, gives rise to the carotid gland. In sheep embryos of 10 and 11 mm. the gland is first seen as a thickening of the posterior portion of the horizontal branch of the branchial cleft, from the superior part of which the thymus develops. Like Stieda, Rabl (cited by Paltauf[2]) holds this organ to be epithelial in origin. He found in mammifera and in birds that the endoderm of the third branchial cleft furnished the ventral diverticulum for the thymus and a dorsal bud for the intercarotid gland. Pierre de Meuron,[24] holding that the carotid gland develops from the third branchial cleft, found it in sheep near the bifurcation of the carotid artery, but in embryos of 18 mm. it was not separated from the thymus. Born[25] is inclined to believe that the structure described as the carotid gland by these authors separates from the parent body and develops into the accessory thyroids. Contrary to the views of the authors who hold the organ is of epithelial origin, Fischelis[26] maintains that the carotid gland develops from the tissues lying between the approximating ectodermal and endodermal layers, but it does not develop from epithelial structures. Katschenko,[27] who, perhaps, has done, if not the most recent, the most thorough work in this direction, takes the ground that the carotid gland arises from a slightly thickened portion of the adventitia of the internal carotid artery near the bifurcation of the common carotid, and that the first evidence of the structure is seen in embryos of 14 and 15 mm. as an ellipsoidal body composed of loosely woven, richly cellular connective tissue. In embryos of 30 mm. he found the portion of the gland nearest to the bifurcation thickened, while that part farthest from this point was thinner; in still older embryos the gland was found nearer the bifurcation. The structure described by Stieda, Rabl and Pierre de Meuron, according to Katschenko, was the upper part of the thymus anlage—the *nodulus thymicus*. Paltauf's[2] investigations lead him to conclusions similar to those of Katschenko; in embryos of 4.5 cm. (Fig. 22*) Paltauf found the organ at the posterior part of the common carotid at the bifurcation. The pictures Paltauf found during his investigations of the carotid gland of rabbits, cats, calves and human beings were so nearly uniform that, according to his views, the anlage is connective tissue rather than epithelial. In snakes Van Bemmelen (cited by Priceteau[28]) found that the organ develops from the endoderm of the third branchial cleft. Prennant (cited by Priceteau) comes to similar conclusions, while Priceteau[28] himself maintains that the carotid gland develops from the third branchial arch and arises from the structure, which gives origin to the common carotid artery. Borst[29] tells us that the organ is derived from the mesenchyme, while v. Heinleth holds that it arises from a cellular thickening of the posterior and outer periphery of the primitive carotid. Differing, but not widely, from some of the opinions given, are the views of Kohn,[30] whose investigations led him to view the origin of the organ as distinctly nervous, maintaining that it developed from the embryonal ganglion cells of the intercarotidal plexus, a view long entertained by Luschka.[31] In embryos of 4 months Marchand found the gland surrounded by loosely woven connective tissue, in which were many blood vessels and nerves.

---

[23] Stieda: "Untersuchungen ueber der Glandula, Thymus, Thyroidea u. Carotica," Leipzig, 1881.

[24] Pierre de Meuron: Dissert., Geneva, 1886, p. 107.

[25] Born: Arch. f. micro. Anat., vol. xxii, 271.

[26] Fischelis: Archiv. f. micro. Anat., 1885, vol. xxv, p. 405.

[27] Katschenko: Archiv. f. microskop. Anat., vol. xxx.

[28] Priceteau: Jour. de Med. de Bordeaux, 1899.

[29] Borst: "Die Lehre von dem Geschwuelste."

[30] Kohn: Archiv. f. micro. Anat., 1900, vol. lvi.

* The twenty-four illustrations, including three views in colors, appeared in the first portion of the article published last week, August 18.

While many views have been expressed with regard to the development of this organ, the trend of opinion of the recent writers looks more favorably on the researches of Katschenko and Paltauf, and tumors arising from the gland are being classified according to the views of these authors, although the grouping would be more satisfactory if the embryology were definitely known.

HISTOLOGY.

The controversial views of the architecture of the normal carotid gland entertained by Luschka[31] and J. Arnold[32] are interesting from an historical point of view and illustrate how both the contending parties may be right in a certain measure. In my first paper[3] I took the ground that the gland was not constantly present; in my recent investigations I have been more successful in finding the organ. The size of the gland varies slightly, according to different authors. Mönckeberg[11] gives its length as varying from 5 to 7 mm., its breadth from 2.5 to 4 mm., its thickness 1.5 cm. Reclus and Chevassu[15] say that it is 7 mm. long. At times it is found on the posterior aspect of the common carotid just below the bifurcation, but most frequently on the inner and posterior side of the internal carotid at the origin of the vessel, where it is attached to the artery by means of a thin strand of fibrous tissue containing its blood vessel, which in embryos of 4 cm. Paltauf found arising from the external carotid. In my recent work I found it lying on the external carotid in the bifurcation.

According to Marchand[1] and Schaper[33] there exists a hilus-like structure where the artery enters the gland. The organ has a distinct capsule, which, according to nearly all authors, contains both types of nerve fibers. The capsule sends forth prolongations that enter the underlying structure and divide the organ into lobules, which are again divided by delicate strands of fibrous tissue or capillaries, or both, inclosing the so-called *Zellballen* (Figs. 23 and 24) of the German writers; each lobule receives a branch from the main artery, so that the number of lobules constituting the gland corresponds to the number of branches the main artery possesses. In the lobules the branches form capillaries, producing a structure which, according to Schaper, conforms to the architecture of the gland described by J. Arnold. This writer, who maintained that the essential part of the organ consisted of the glomeruli which are formed of a capillary network, is supported in his contention by Pfoertner,[34] Eberth[35] and Frey.[36] Paltauf, on the other hand, does not hold the organ as a typical glomeruluslike structure, but maintains that in addition to the glomeruli there are large cells lying in close association with the blood vessels and at times lining spaces.

It is very interesting to note that in this controversy between Luschka and Arnold with regard to the structure of the organ, each side had some grounds on which to base its argument, and it is also interesting to note that while most authors now regard the carotid gland as largely a vascular structure and that the cells of the organ are in some way intimately related to the capillaries, recent experiments indicate the correctness of the view expressed by Luschka that the carotid gland is analogous to the coccygeal, the suprarenal glands and to the hypophysis cerebri. Because of the organ's close proximity to the cervical ganglia and because of the presence of many nerve fibers in the gland Luschka regarded it as a nervous structure. Paltauf suggests that later we may recognize a close relationship between the nervous system and the gland.

It must be admitted that the arrangement of the cells of the carotid struck Luschka as being like that of an epithelial gland and that he did not recognize the irregularly arranged and irregularly distributed chromaffine cells, the elements on which the secretory properties of the organ depend. The vessels of the carotid gland, that is, the branches of the main artery, are of considerable size; occasionally they are small and contain but few red blood cells or granular detritus.

Marchand states that the structure of the gland is difficult to determine, but that it is composed of two essential elements, namely, blood vessels and cells. The cells are large, polyhedral, round or oval; the protoplasm is granular and stains faintly. Mönckeberg speaks of protoplasmic prolongations which are occasionally found. The nuclei of the cells are circular or oval and, like the protoplasm, react poorly to the stains. Although the arrangement simulates gland structure, the phenomenon is too inconstant to ascribe to the cells a definite arrangement, but in nearly all instances they are intimately related to the blood vessels; in fact, so intimate is this relation that Marchand is strongly inclined, even in the adult gland, to regard the cells as derivatives of the capillaries. Marchand, and recently Mönckeberg, have pointed out that the capillaries sometimes appear to penetrate the cells, a phenomenon frequently observed in my studies of the normal gland. Paltauf holds that the fibrous reticulum is in no way related to the cells, except to act as a sustaining frame. He notes that the reticulum is not developed to the same extent at all points; occasionally it is so inconspicuous and the nuclei of the cells are so prominent that it is difficult to determine whether these nuclei belong to cells poor in protoplasm or whether they belong to giant cells. Schaper, on the other hand, did not find the reticulum described by Paltauf, whose findings Schaper regards as postmortem changes. According to the last-named author the trabeculæ arising from the capsule divide the organ into secondary nodules, the fibrous tissue around which penetrate them and surround the *Zellballen,* the elements of which, Schaper holds, are not identical with the cells lining the blood vessels, thus controverting Marchand's view. Schaper bases his opinion on the fact that the endothelial cells of the capillaries are never absent. The typical relation of the cells to the capillaries occurs at those points where the cells in a single layer form partially closed spaces, the relatively small lumina of which may contain one, two or even three capillaries.

Among the cells of the lobules and in the stroma are a different type of cellular elements, to which Stilling[37] applied the term "chromophile" and which have recently been described by Kohn, who termed them "chromaffine" cells because of their affinity for the chrome salts. The recent work of Mulon[38] attributes to these cells an important functional significance. Similar or, perhaps, identical cells have been found in the suprarenal glands

---

31. Luschka: Archiv. f. Anat. u. Physiol., 1862, p. 406.
32. Arnold: Archiv f. path. Anat., 1865, vol. xxxiii, p. 194.
33. Schaper: Archiv. f. micro. Anat., 1892, vol. xl.
34. Pfoertner: Henle's u. Pfeffer's Zeitft., vol. xxxiv.
35. Eberth: Strickler's Gewebelehre, p. 213.
36. Frey: Handb. d. Hist. u. Histochemie, p. 482.
37. Stilling: Revue de Med., 1891.
38. Mulon: Archives Gén. de Méd., 1904, p. 3265.

as early as 1865 by Henle.[39] These cells have been found in the coccygeal gland, the hypophysis cerebri and in the abdominal sympathetic ganglia. Mulon made extracts from the carotid glands of horses and injected this substance into the veins of rabbits, where it invariably produced a rise in the arterial pressure and sometimes produced an acceleration of the beat and force of the heart. Mulon concludes that the chromaffine cells secrete a substance which, when introduced into animals, acts like adrenalin in raising the arterial pressure. The structures containing these cells he terms "chromaffine organs," and holds that they present some connection with the sympathetic system. If these experiments are corroborated the organ will necessarily have to be termed a gland instead of a body.

TUMORS OF THE CAROTID GLAND.

The tumors, Marchand maintains, arise as a result of the proliferation of the cells of the gland. The growths are either lobular or lobulated; sometimes they are the shape of a small kidney. Lobulation is not infrequent, because of the location of the neoplasms, which during their development grow on either side of both the internal and the external carotid arteries; then, too, the broad septa which penetrate the tumors draw in the capsule at various points and thus produce the lobulated condition. If the tumors remain globular they may push upward as they develop, increasing the angle of the carotids and finally lie on the vessels. This fact was noted by Reclus and Chevassu. Gilford and Davis noted that, while their tumors were adherent to the carotid vessels, they rested on these structures. Marchand says they rest on the carotid arteries as the thyroid rests on the trachea, but the tumors in addition encircle the vessels.

The consistency of all the reported growths is not uniform. Paltauf's first case presented a firm tumor and his second was less firm, but not soft. Kopfstein speaks of a firm growth; the three reported by Gilford and Davis were hard, and the first tumor which Mönckeberg reports was firm; Scudder's and Kretschmann's tumors possessed a similar consistency. The greater number of the reported cases were soft; indeed, some authors speak of a brain-like consistency. Case 22 of the reported series was elastic and soft, and Cases 26 and 27 were softer. The consistency depends largely on the amount of fibrous tissue present and also on the degree of the blood-vessel distension.

The color varies from a reddish-gray to a gray or a brown. Few authors report the gray color seen by Gilford and Davis. Kopfstein and von Heinleth state that the color of the tumor simulates the tinge of a parenchymatous goiter. Reclus maintains that the color ranges from a brownish-violet to a pure violet.

Encapsulation is present in all cases, and although the capsule is most frequently adherent to the surrounding structure it is occasionally free. If the carotid arteries are not embedded in the tumor there are, as a rule, two grooves, either on the anterior or on the lateral surface of the growths. This is due to the fact that as the neoplasms develop there is a tendency to grow posterior to the carotid vessels. The capsule gives rise to many bands that can be identified macroscopically and which penetrate the underlying structure, where they gradually become lost. Occasionally the cut surfaces of the tumors contain large masses of fibrous tissue at some points, usually near the center of the growths.

The blood vessels are a conspicuous feature of the tumors. They are found in the capsule and in all parts of the growths. So abundant are these structures that the cut surfaces of the neoplasms appear sponge-like.

While these tumors often differ in their minute structure, the histology, in a general way, is identical in nearly all the reported cases. The capsule is always described as containing arteries and veins in considerable numbers. Nerve fibers of both the medullated and the nonmedullated types are found by all writers, but I must confess that I have not succeeded in demonstrating these structures in any of the tumors I have had occasion to examine. The fibrous septa mentioned in the gross description as arising from the capsule are more abundant in some tumors than in others; Case 22 was particularly rich in this respect. These penetrating bands, which contain small and large blood vessels, take part in the production of the alveolar architecture, which is a characteristic feature of these growths. Paltauf and Kopfstein speak of the hyalin degeneration these septa suffer. This change was more marked in Case 22 than in Cases 26 and 27. Von Heinleth holds that this change is incident to alterations in the capillaries; the cells lining these structures by overproduction cause occlusion of the lumina of the vessels and thus give rise to hyalin degeneration of the neighboring tissue, as well as the capillaries themselves.

The blood vessels alone, in a large number of cases, form the walls of the alveoli, but occasionally the capillaries are supported by thin fibrous strands, constituents of the fibrous septa. In Case 22 the walls of the alveoli were uniform in thickness and rarely did the capillaries alone form the alveolar walls; in Cases 26 and 27 they were less uniform in thickness and not infrequently, in fact most frequently, they were formed by the capillaries alone or by a single layer of endothelium. Many of the walls were difficult to determine. It is not a rare occurrence to find large vessels from which smaller ones arise and anastomose with other capillaries, forming in that way the walls of the alveoli. The capillaries vary with regard to their structure; occasionally the walls are composed of a single layer, occasionally there appear to be two layers of endothelial cells; in others the endothelial lining is supported by thin fibrous strands.

The size of the alveoli varies. In Case 22 they were fairly uniform, ranging from 0.05 to 0.1 mm. in diameter, while in Case 27, or the tumor reported in this paper, they varied considerably; some possessed a diameter of 0.4 mm. The shape, like the size, varies; in Cases 22 and 26 they were all either circular or oval; in Case 27 the one diameter exceeded the other four and five times, the contained cells forming long strings, like those constantly seen in endotheliomata.

The spaces or alveoli invariably contain tumor cells, which are, as a rule, large and polyhedral in shape, although this varies according to the amount of pressure exerted, and, since the cells possess no limiting membrane, but little force is necessary to influence the shape. Oberndorfer tells us that in his tumor the cells were small but the protoplasm comparatively large. Mönckeberg speaks of the relatively long protoplasmic prolongations as being present among the polyhedral, spindle- and triangular-shaped cells of the alveoli. Paltauf refers to the protoplasmic processes, which, he says, are found among the cells at the peripheries of the *Zellballen* and which protrude into the walls of the capillaries; this phenomenon suggests very strongly to Paltauf that the cells of the spaces are derivatives of the capillaries forming the walls of these structures. Because of the absence of the limiting membrane, the granules of the protoplasm are not closely set and consequently, in a large majority of instances, this substance is transparent. In Case 27 I found vacuolation a few times. In Cases 22 and 26 the cells showed no such condition. Mönckeberg found glycogen in the tumor cells examined in the fresh state, and maintains that the vacuolation found in these structures by other authors is due to glycogenic infiltration. The demonstration of this substance further illustrates the resemblance of the carotid gland to the suprarenal glands. Perhaps further studies instituted by Mulon will bring to light still other similar features in these two organs, so widely separated topographically.

---

[39] Henle: Zeitft. f. rationalle Med., 1865.

Oberndorfer speaks of a foam-like appearance of the protoplasm of these cells, which he believes to be due to the presence of fat globules or glycogen, but because his specimens were not examined in the fresh state it could not be determined which of the two substances was present. The number of cells in each alveolus varies in different tumors and also in the same growth. In Cases 26 and 27 the spaces were so well filled that it was extremely difficult to identify the boundaries of the alveoli in many parts of the tumor. Marchand in his paper called attention to this feature.

The nuclei of the cells are, as a rule, large; of course, they vary and sometimes they are small in comparison to the size of the protoplasm; some are circular, others are spindle-shaped, but the greatest number are oval: all are vesicular. The nuclei can be studied to a greater advantage owing to the fact that they are so readily outlined. The nuclear membrane is always conspicuous; the amount of chromatin varies in the same growth and in different growths. The chromatin in the nuclei of the tumor cells in Cases 22 and 27 was very much less than in Case 26, in which the staining of these structures was intense compared with the other cases named. In Cases 22 and 27 the centers of the nuclei were very often occupied by a hyalin substance, now and then traversed by a delicate chromatin-containing strand. It is not an uncommon thing to find among the *Zellballen* red-blood cells; in fact, nearly all writers on the subject speak of their presence. Mönckeberg found alveoli where the tumor cells had been almost entirely replaced by the blood. In addition to the blood cells Paltauf found fibrin. Red blood cells were present in greater abundance in Case 27 than in Cases 10, 22 and 26. Marchand notes that in his tumor the cells were placed so loosely in the alveoli that the dislodgement was readily accomplished. Leithoff calls attention to the fact that in the tumor of which he writes the alveoli contained many cells, the protoplasm of which was scanty, but the nuclei were prominent and rich in chromatin. He states that they bear a striking resemblance to sarcoma cells.

Occasionally the tumor elements, instead of being inclosed by the delicate fibrous tissue strands or the capillaries, are disposed around cross-sectioned vessels, there being no definitely formed alveoli. Here occasionally one finds tumor cells placed at right angles to the blood vessels. Leithoff[40] maintains that such an arrangement is a frequent occurrence, while Mönckeberg holds these pictures as coincidents rather than as specific arrangements. Now and then one finds tumor cells, as pointed out by Oberndorfer, arranged around small spaces forming structures like acini. Paltauf referred to these pictures as spaces in the *Zellballen*. Marchand observed certain cells which he maintains resembles syncytium and regards them as probably the result of confluence of several tumor cells. Oberndorfer speaks of similar structures. Mönckeberg and also Gilford and Davis found elements containing nuclei; they look on them as giant cells; similar structures were found in Case 26.

The source of the tumor cells is still an unsettled question. Von Heinleth declares that the tumor elements not only lie on the capillaries, but are derivatives of those structures. Marchand is of the same opinion. There are points in the sections that appear to me to indicate that the cells must be derivatives either from the endothelium or, what is more probable, from the cells around the capillaries, which are perhaps identical with the endothelium. There is, of course, no method by which we can determine definitely that the tumor elements are derivatives from either the lining of the capillaries or the cells around these vessels. In Cases 26 and 27 it was no uncommon thing to find capillaries with a single layer of endothelium forming the alveolar walls, to which were partially attached cells jutting into the alveoli and among the contained cells.

Kaufmann and Ruppanner exclude the carotid tumors reported by Gilford and Davis, but Dr. Keen has included them in the series. The ground on which Kaufmann and Ruppanner make the exclusion seems to me insufficient; the only sound point in their argument which can possibly carry weight is the fact that the tumors were found lying on the carotid arteries instead of behind and between them; in the gross description mention was made of the fact that if the tumors remain globular they may push upward, increasing the angle of the carotids, and finally may lie on these structures. In the second case of the Gilford and Davis report the statement is made that the tumor was also between the vessels. While it is the rule to find the tumor extremely vascular, yet in the same case they say that in some areas the tumor was soft and red in color; the prevailing tinge was gray. It must be admitted that the microscopic description is very superficial, yet they speak of the alveolar arrangement of the cells and of the fine capillaries in the walls of these structures; their description of the tumor elements corresponds to the cells found in carotid tumors; they also found red cells among the tumor elements in the alveoli, a constant feature of these neoplasms. Giant cells which they found have been mentioned by several authors.

By some these tumors have been termed angiosarcomata, but most writers have called them peritheliomata. Leithoff,[40] because of the abundance of the small cells in the alveoli, declared the tumor of which he wrote was a perithelial sarcoma. Paltauf maintains that histologically the perithelial cells do not differ from the endothelial, consequently there is no sound basis on which the term perithelioma is placed, yet he maintains that multiplicity of names, when associated with the proper conception, does not constitute a source of confusion. I am inclined to simplicity and would suggest that the tumors be called endothelioma, notwithstanding the fact that I applied the term perithelioma to the tumor in Case 22.

DISCUSSION.

Dr. Joseph D. Bryant, New York, said that he had never met with a case of this kind and had been able to learn of but one, and this only after consulting with the pathologists of his city. It occurred to Dr. Bryant that the interference of the circulation referable to the brain would be an important matter to consider and, therefore, he consulted the classic essay of Dr. Wyeth, published some years ago, bearing on the surgery of the carotid artery, and found that he had collected 789 cases of ligature of the common carotid, 95 or 12 per cent. of which caused more or less disturbance of the cerebral circulation. From this 95, he selected 62 cases and arranged them according to age and sex.

---

[40] Leithoff: Dissert., Wurzburg, 1904.

Of these 62 cases under 25 years of age there were 21 cases in which cerebral disturbances ensued, following ligature of the common carotid; 7 females and 14 males. Of the 7 females, four recovered and three died. Of the 14 males, three recovered and eleven died. Twenty-eight cases were noted between 25 and 50 years of age, 6 females and 22 males. Of the 6 females, one recovered and five died; of the 22 males, 6 recovered and 16 died. From fifty years and upward there were thirteen cases, eight males and five females. Of the eight males, two recovered and six died. Of the females, all died. These cases are interesting, because they illustrate very forcibly the effect of ligature of the common carotid arteries, but this list can be regarded only as suggestive, since many of the cases were of greater significance in other respects than ligature of the vessels for carotid tumors. The latest general statement regarding deaths in ligature of the common carotid shows that of 834 patients, 327 died; of the total number (834), 789 were ligatured before asepsis, 323 of whom died. Of the remaining 45 ligatured under asepsis, but 4 died, showing at once the great importance of modern methods.

PARAFFIN PLATES AS AN AID IN OPERATIONS FOR EXTENSIVE SYMBLEPHARON

AND FOR THE RESTORATION OF CUL-DE-SACS FOR PROTHESIS.*

WILLIAM H. WILDER, M.D.
CHICAGO.

Symblepharon of severe degree, because of extensive destruction of the conjunctiva, has long been a *bête noir* for the ophthalmic surgeon. I do not intend to consider in this paper those simpler cases in which there is a limited destruction of the conjunctiva and slight band-like adhesions between the eyelid and the ball, for these can easily be relieved by the exercise of some ingenuity on the part of the surgeon and the transplantation of flaps of conjunctiva by one of the many methods that have been devised by different operators. I propose, however, to consider those severe cases in which, from injury, burn or ulceration, there has been extensive destruction of the conjunctiva, and a great part or the whole of one or both lids has become firmly adherent to the eyeball.

My subject also includes those more difficult cases of atrophy of the conjunctiva, sometimes almost total, resulting from ulceration, burn, cicatricial growth in the orbit from cellulitis after an imperfect operation of enucleation, in which an artificial eye can not be worn and which are brought to the surgeon for prothesis. Such cases of total symblepharon have been a dread to every ophthalmic surgeon, and, as stated by Arlt years ago, are for him a *noli me tangere.*

Knapp[1] stated:

> In spite of the numerous attempts which, during the last twenty-five years, have been made to remedy this unfortunate condition by grafting skin or mucous membrane of all possible localities and in all possible manners on the atrophic surfaces, I have not seen, either in New York or in my travels, a single case that had been more than a temporary improvement, including even the cases in which the object aimed at was only to fit a stump for the prothesis of an artificial eye. All these grafts, if they take root at all, sooner or later ulcerate and slough or shrink to nothing.
>
> The older methods of securing free space by putting between the wounded surfaces foreign bodies, e. g., plates of metal, have been abandoned.
>
> The grafting of small pieces of skin or mucous membrane on wounded surfaces had practically to be given up when tried on the conjunctiva. The unavoidable movements of the eye almost always prevented them from taking root.

I make this rather extensive quotation from such an eminent authority as Dr. Knapp to show that as late as 1898 the application of grafts for the purpose of making an artificial fornix was unsuccessful, and the same was said of transplantation of skin flaps from the lid or cheek.

The reasons for failure are apparent. Thick-skin grafts, such as Wolff grafts, are more likely to slough than the thinner Thiersch grafts. Again, the latter are not likely to grow unless they are perfectly and evenly applied to the wound surface, and this is accomplished with difficulty in the case of a cul-de-sac or fornix that has to be lined unless we use some means that insures perfect and even coaptation. This is not accomplished by the use of sutures placed through the graft and fornix, for these tend to wrinkle it, but such sutures may have a distinct advantage if used according to the method practiced by Weeks,[2] so that they will pass through the firm tissue of the periosteum in their course to the cheek and so anchor the graft firmly and reduce to a minimum contraction of the new fornix.

The ideal operation for symblepharon will be that which will bring about permanent restoration of the fornix and secure mobility of the eyeball, or, if the eyeball is absent, furnish a cul-de-sac deep enough to allow an artificial eye sufficiently large to be worn. This ideal operation must remove any cicatricial tissue that causes thickening and deformity of the lid, or that would by its contraction cause shrinking of the newly made cul-de-sac.

The new cul-de-sac must be lined with epithelium, and for this purpose one would preferably select conjunctiva if that were available, but this is not easy to obtain, although for operations of limited extent the conjunctiva of a rabbit or a dog may be used.

In this particular we can not attain our ideal and are forced to take epithelial structure from some other part. Mucous membrane from the lip may be used, but here again the amount is limited and it is difficult properly to sterilize it and to remove it in thin layers, such as are required. Furthermore, such grafts are more liable to shrink than those taken from skin surfaces.

The lining graft should be thin and membrane-like, and so if mucous membrane is not available Thiersch grafts of suitable size may be used instead. These, as originally pointed out by Hotz,[3] answer almost every requirement, although, naturally, there are some objections to their use. The membrane must be perfectly fitted to line the pocket and must not wrinkle or fold, but must be perfectly coapted; otherwise it will not attach itself and will slough away. The introduction of some mechanical appliance, such as a plate, that will press the graft evenly and firmly into every part of the new cul-de-sac, and will at the same time immobilize the part, so that healing will take place promptly, a plate that can be easily removed if desired and as easily replaced, that will not irritate by its presence; such a method would approach the ideal.

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Norris & Oliver: "System of Diseases of the Eye," vol. iii, p. 884.

[2] Weeks: Trans. Sect. on Ophth., A. M. A., 1902. Trans. Tenth Cong. Ophth., Lucerne, 1904.

[3] Hotz: "The Use of Thiersch Skin Grafts as a Substitute for Conjunctiva." Ann. Ophth., April, 1893.

A number of years ago, before the introduction of plates for this purpose, I tried in several cases to hold the graft smoothly in place by pouring melted paraffin into the freshly lined pocket, but the paraffin had to be of such low melting point to avoid injury to the tissues that it was not firm enough to give the needed support. In some simpler cases it seemed to suffice, but it would not meet the requirements in the more difficult ones. I made mention of my experience with this method a number of years ago in a discussion on this subject in this section, but I have since abandoned its use.

Nothing answers so well the purpose of holding the graft in position as some form of plate. In 1898 Morton[4] recommended the use of a prothesis to hold the grafts in place, and a little later May[5] contributed reports of several cases successfully treated by this method. He uses a shell of porcelain or glass, shaped like an artificial eye, on which the Thiersch graft, with its raw surface outward, is placed. This shell is then placed in the newly made cul-de-sac, so that the raw surfaces are brought into contact. Fine sutures unite the edge of the graft with the edge of the wound.

A number of operators have reported satisfactory results in operating for total symblepharon by implanting Thiersch grafts and holding them in place by a glass or porcelain prothesis after the method of Morton and May. Among these are Natanson,[6] Grunert,[7] Gullstrand[8] and Abadie.[9]

Weeks recommends a plate made of "base gutta percha" about 1 mm. thick, such as is used by dentists, which is molded into proper form after dipping it into hot water. The Wolff graft that he uses is secured by loop sutures that pass through the firm periosteum at the orbital margin, and is then held in place by the gutta-percha plate.

Hotz[10] employs a lead plate (Fig. 1) that is shaped to fit the new cul-de-sac. The Thiersch graft is first spread out over the wounded surface and the edges united with fine sutures. After this is accomplished the lead plate is placed in position and stitched to the lid through holes previously drilled through the plate. This holds the graft down into the deepest part of the cul-de-sac.

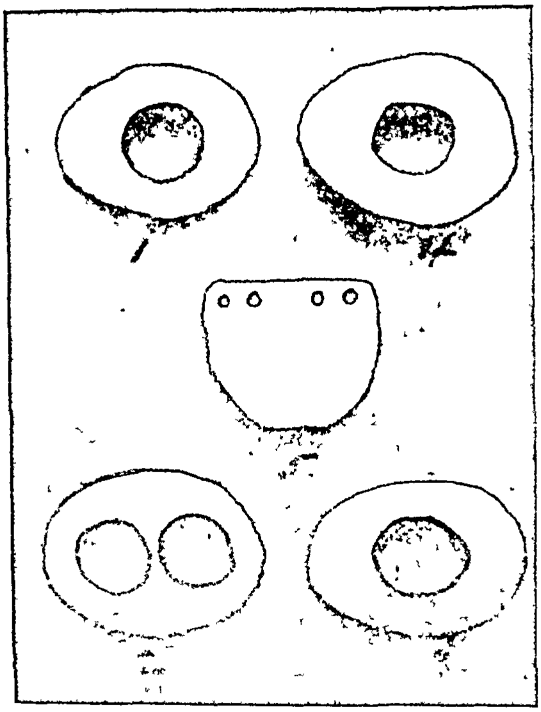
H. W. Woodruff[11] employs much the same method, preferring, however, to make the plate of block tin. He spreads the graft over the edge of the plate, raw side outward, and then inserts it carefully into the new cul-de-sac. He does not attempt to suture the edge of the graft to the conjunctiva (a manifest advantage if it can be dispensed with), but in sewing the plate to the lid he passes the thread through that part of the graft that lies next to the lid. Only one lid is operated on at a time.

I have seen the results of some of Dr. Woodruff's operations and can testify to the value of the method. Indeed, his success prompted me to endeavor to add something to the technic of this difficult work.

The method of operation that I now employ, a modification of the plate or prothesis method, has proved so successful in my hands in a number of difficult cases that I venture to recommend it. Metal plates, preferably of soft sheet lead or block tin that can be easily cut to any size or molded to any shape, are coated with hard paraffin of high enough melting point so that the temperature of the body will not melt it and so expose the metal plate. Such a paraffin plate is perfectly smooth and can do no harm to the cornea.

Through the center of the plate a hole about the size of the cornea has been made, and through this the cornea can be seen and treated if necessary while the plate is in position (Fig. 1).

In operation on cases of obliteration of the conjunctival sac, the eyeball being absent, I use a paraffin plate of a size large enough to fill out both cul-de-sacs, and in the center of this plate have two or three holes, through which the orbit can be easily irrigated while the plate is in position. Furthermore, the band of metal separating these openings furnishes a good handle for the forceps to seize while inserting or removing the plates.



Figs. 1 and 3.—Lead plates prepared for symblepharon operation, the cornea being present.
Fig. 2.—Lead plate used for restoring cul-de sacs for prothesis. This would be coated with paraffin.
Fig. 4.—Similar plate coated with paraffin.
Fig. 5.—Lead plate to be sewed to the lid in the method of Hotz and Woodruff.

TECHNIC.

The technic of an operation for symblepharon of one or both lids when the eyeball is present and the cornea is intact or partially so would be as follows: In many cases local anesthesia will suffice. In addition to 4 per cent. cocain solution externally, hypodermic or subconjunctival injections of 0.5 per cent. solution are used. In extensive cases or with nervous individuals a general anesthetic would be required.

If the palpebral fissure is shortened, a free canthotomy should first be made, extending to the orbital margin to give a free field for dissection. The lid should then be carefully dissected from the cornea, if it is attached thereto, and this can best be done with a Graefe cataract knife. In the course of the separation of the lid from the eyeball and the preparation of a new cul-de-sac the dissection should be made close to the lid and should proceed until the margin of the orbit is reached, if there is much cicatricial tissue present. Unless the dissection is close to the tarsus the lid is apt to appear too thick; this precaution, therefore, is especially to be observed in restoration of the socket for prothesis.

---

[4] Morton: Ophth. Rec, Aug., 1898.
[5] May: Arch Ophth, vol. xxviii, p 182, 1899; vol. xxx, p. 474, 1901
[6] Natanson: Klin Monats. f. Augenhk., vol. xlii, p. 116.
[7] Grunert: Klin Monats f. Augenhk., vol. xliii, p 298
[8] Gullstrand: Klin. Monats. f. Augenhlk., vol. xliii, p 312.
[9] Abadie: Bull et Mem de la Soc. Franc. d' Ophth, vol. xx, 1903, p. 241.
[10] Hotz: Klin. Monats. f. Augenhlk., vol xliii, p 319, Chicago Med Rec., 1901; Ann. Ophth, July, 1905
[11] H. W. Woodruff: Ann. Ophth, March, 1903

If the margin of the lid has been destroyed, as by a burn, an attempt should be made to restore it by inverting the part dissected from the eyeball, and by loop sutures passed through it, "hemming" it in a position to secure proper continuity of the lid border. This can sometimes be very accurately done, as in a difficult case of symblepharon I recently had in which two-thirds of the lower lid border changed into scar tissue because of a burn with molten iron, had grown to the eyeball, covering the lower half the cornea.

In preparing such a flap for inversion, care should be taken to make it thin enough by dissecting off the cicatricial tissue with knife or scissors.

When the cul-de-sac has been made of the proper depth and the eyeball is free to move in all directions, the operator proceeds to fashion a prosthetic plate. For this purpose pure sheet lead about 0.5 or 1 mm. in thickness is preferred, for it is easily shaped with scissors, knife and file, and is soft enough to mold into any form to suit the individual requirements. The part that is to hold the graft in the new cul-de-sac may be made of more prominent contour to insure a greater depth at this point. As the piece has been properly sterilized, it can be introduced into the wound to be sure that it will fit. A large circular opening for the cornea is then made with knife or drill and its edges made smooth with a round file. After being cleansed and dried, the plate, held by its edge with light forceps, is dipped quickly in melted paraffin, which has previously been sterilized by boiling.

As has been said before, this paraffin should be hard, with a melting point not lower than 130 F. The thin layer that adheres to the metal can be quickly set by dipping it into cold water, and then it can be repeatedly dipped into the paraffin and into the water until it has an even coating of the proper thickness. The vessel containing the melted paraffin should be in a dish of hot water to prevent congelation; otherwise the layer of paraffin deposited will be too thick and uneven. A very short time is required to prepare such a plate.

A thin Thiersch graft should then be cut from the least hairy part of the arm or leg. It is well to have the graft wide enough so that one piece will answer for each lid and there will not be too much overlapping. The razor that is used for cutting the graft should be in the best possible condition and should be flat on one side, like that used for histologic section cutting. A very little vaselin or soft-soap rubbed on the flat surface of the razor prevents it from sticking to the skin and so insures a more even graft as the surgeon cuts it with short sawing motions. An assistant keeps the razor and graft flooded with warm salt solution.

The graft is transferred to the paraffin plate directly from the razor by setting that edge of the plate which is to rest in the new cul-de-sac against the epithelial side of the graft which is uppermost, and then stroking it into place with forceps or spatula, so that both sides of the plate are covered. The graft is very easily handled, as it adheres beautifully to the paraffin surface, and every wrinkle can be smoothed out or the position can be changed as desired. This adhesion of the graft to the paraffin, preventing the curling of the edges, which is so annoying, and making unnecessary the use of any sutures, is one of the advantages of the method.

The plate now covered with the graft, the raw side outward, is inserted into the new fornix, the hemorrhage, of course, having been checked. The graft naturally comes in contact with every irregularity of the raw surface of the cul-de-sac and should be large enough to lap over on the uncut surface. No sutures or trimming are necessary, for the overlapping edges will either be cast off or can be trimmed off later at the time of one of the dressings, and if care has been taken in fitting and coating the plate and applying the graft smoothly to it all raw surfaces will be covered.

If the symblepharon affects but one lid there will be very little danger of dislodgment of the graft when the operator inserts the paraffin plate, if he first presses it into the new cul-de-sac and then draws the sound lid over it. If both lids are involved it would be better to avoid displacing the graft on one side of the plate by securing it with two or three sutures, which can be passed through the edge of the graft and then through the openings in the plate to the edge of the graft on the other side. This can very easily be done, as the graft adheres so well to the paraffin. It is almost needless to say that during the manipulation of the graft on the plate an assistant should keep it warm and moist with saline solution. In this way both lids can be operated on at the same session.

If a canthotomy has been done, the canthus should be brought together with sutures, and then a moist boric-acid dressing of gauze and cotton should be placed over the closed lids and held in place with an appropriate bandage. Both eyes should be bandaged and the patient kept in bed. The dressing may be changed the next day so that the cornea may be inspected and the eye gently irrigated with a warm boric-acid or saline solution.

If the case is one in which the eyeball is present, the plate is carefully removed at the end of forty-eight hours to make sure that the cornea is uninjured and that the paraffin has not been rubbed off the plate. The graft will be attached by this time, but after gentle irrigation the plate should be reinserted and the eyes dressed as before.

In cases of restoration of the cul-de-sacs for prothesis in which the eyeball is absent, the plate may be left in position for six or seven days, if there is no evidence of infection, and the orbit irrigated through the openings in the plate. At the end of this time it should be removed, recoated with paraffin, if necessary, and reinserted. If the plate used in such a case has been very large, to insure deep cul-de-sacs, it may be necessary to cut it in two to remove it easily, but this can be readily done with scissors along a central line corresponding to the long axis of the palpebral fissure. A smaller plate can be reinserted or the old one can be reapplied by hinging it, that is, making holes at either end of each half and tying them together with strong silk thread. In cases in which there has been extensive contraction of the conjunctiva, such plates must be worn continuously for weeks to prevent shrinking of the new cul-de-sac.

I have operated by this method in eight severe cases of symblepharon, two of which were total, and with uniformly good results. Six of these cases had extensive symblepharon of the lower lid, so that the cornea was partly covered by the adhesion and the eyeball could not be moved. The patients wore the paraffin plate over the cornea with perfect safety and comfort until the graft had firmly healed in place and good mobility was secured. In the cases of total symblepharon there was complete obliteration of both cul-de-sacs, in one of them the palpebral fissure being reduced to a mere slit. In each case operation was done on both lids at one session and the results obtained were such that an artificial eye could be worn. Furthermore, the length of time that has elapsed since the operation, two and one-half years in one case and nearly two years in the other, without noticeably more shrinking than occurred in the first three months after the treatment, encourages me to believe that the result is permanent.

CONCLUSIONS.

The advantage of a plate for holding mucous or Thiersch grafts in place in the fornix of the eyelids is obvious. The advantage of the paraffin plate is that it can do no harm to the cornea. It can be built up as required to fit any conjunctival cul-de-sac that has to be lined with a Thiersch graft. The graft adheres to the paraffin, so that it can be evenly smoothed out on it, and thus perfect coaptation is secured between the graft and the raw surface of the cul-de-sac. To accomplish this the graft should be thin and large enough to cover all raw surface, no sutures being required. With perfect coaptation the graft will have secured a firm hold at the end of forty-eight hours and the plate can be removed for cleansing the eye. In the case of restoration of the socket for prothesis. it may be left in place for a considerable time, for the sac can be cleansed by irrigation through the holes in the plate. If it is so large that there is difficulty in removing it, it can be cut in two and the subsequent treatment continued with a plate that can be more easily inserted.

DISCUSSION.

Dr. Charles H. May, New York, has been so well satisfied with the porcelain supports he has been using, that he has never felt tempted to try any substitutes. He uses porcelain shells of greater or lesser thickness, having the shape of artificial eyes; in fact, they are artificial eyes minus the coloring which is added for cosmetic effect—the blood vessels, iris and pupil. He has a supply of various sizes, including some which are shell-shaped and others which are thicker and hollow, corresponding to the so-called Snellen or reform eyes. Porcelain can be easily sterilized; it is smooth and polished and thus will not damage the cornea (in cases in which the cornea is intact); it is available in different sizes, shapes and thicknesses, and it requires no special preparation.

He thought that the circular opening in the plate, advocated by Dr. Wilder, is an advantage in those cases in which the operation is performed for extensive symblepharon and in which the cornea is healthy, since it admits of inspection of this part of the eye without removal of the graft support. Even in those cases in which there is no cornea to protect, the ability to irrigate and cleanse the orbit through the openings in the paraffin-covered plates seems a very desirable improvement in technic, providing the necessary separation of the lids does not disturb the graft sufficiently to interfere with smoothness in the adhering process. With the porcelain supports, since it is injudicious to remove the shell for six days, the orbit can not be cleansed thoroughly, and only such material as escapes to the edges of the lids and dressing can be removed. It is true the orbit does not present so favorable a seat for infection as does a bony cavity surrounded by venous sinuses and meninges; but the possible danger of such a result ought not to be entirely dismissed, and the patient's temperature should be carefully watched. The openings in the support, advocated by Dr. Wilder, lessen this danger, if a more extended resort to this operation should prove that such a risk really exists.

Concerning the technic of the operation, he is in the habit of making the cavity just a little larger than is desired. The formation of a little recess at the external canthus is very important. A prothesis is inserted which makes the palpebral aperture just a little larger than that of the opposite side; the one selected should fit nicely and easily, and should remain in position without any necessity for external aid. During the time that bleeding is being controlled, the prothesis is removed, placed on a piece of rubber tissue and a pattern cut out one-third larger than is sufficient to envelope the artificial eye; this serves as a guide to the size and shape of the graft. He prefers Thiersch grafts, but is not prepared to say that they should always be used. The Wolff graft is thick and occupies a good deal of space, the defect in the integument is a very considerable one, and there is often some tension and sometimes a little difficulty in the approximation of the edges, and always quite a scar. In one case in which he used a Wolff graft, although he selected a region of the skin devoid of all but the very finest hairs, the latter became thicker, coarser and longer in their new situation, and in the course of a few weeks quite a crop of good-sized hairs presented itself in the newly-formed socket; the thick graft is much more easily handled than the Thiersch grafts.

The graft is next wrapped around the prothesis, with the raw surface externally, in such a manner that the junction of the upper and lower margins will fall in the middle of the anterior or convex surface of the support. If, after insertion, the support stays in nicely so that there is no tendency to fall out, and the socket seems comfortably filled so that the lids can be closed readily, he does not insert any stitches either through the bottom of the cul-de-sac, at the edges of the denuded portion of the socket, nor sutures to hold the lids together. The support if sufficiently large and correct in fit, keeps the graft in close apposition with the raw surfaces. The marginal excesses of the graft slough away. A moist dressing is applied, changed after 48 hours, and daily thereafter; but the support is not disturbed until after 6 days.

He agreed with Dr. Wilder that no sutures are necessary. He has used marginal stitches, and has also employed two sutures through the bottom of the cul-de-sac, coming out just above the supraorbital margin, as recommended by Weeks; but the cases treated without both of these forms of stitches have done just as well as those in which he has used them. The main factor in keeping the graft in place and in having it taken evenly and completely is not the stitches, but sufficient size of the cavity created and ample size and correct shape of the support. In those cases in which there is a globe with clear or damaged cornea and the operation is resorted to for the cure of extensive symblepharon, he is in the habit of sewing the graft or grafts in place by marginal sutures, and then inserting the shell-shaped support. Here also, the success or failure of the operation seems to depend on the establishment of sufficient depth of the fornix and the insertion of a support of adequate size.

Dr. Clark W. Hawley, Chicago, has seen the plates used in one or two cases with very satisfactory results. He has never used the Wolff grafts, but has used a large number of Thiersch grafts and has been well satisfied with them. Some operators make them too thick. He has seen two operations for pterygium fail because the grafts were too thick. The grafts can not be made too thin, especially when grafting on the eyeball itself. The suggestion as to infection through the Thiersch grafts he thought was not well taken. He thoroughly cleanses the field from which the graft is taken so that there is very little danger of carrying infection that way. He has never lost even a part of a graft and so has had no thought of such a thing as infection.

Dr. John E. Weeks, New York, pointed out that it is evident that different men with the same purpose in view, and the same material to work on, will obtain different results. In his opinion there are a number of essentials for the success of this operation. One is that the groove must be sufficiently large and deep; in many cases the external canthus must be divided. Another is that the flap must have attachment to the peritoneal

---

ADDITIONAL REFERENCES.

12. Czermak: "Die Augenärztlichen Operationen," 1893-1904.
13. Axenfeld: Klin. Monats. f. Augenhlk., 1900.
14. Noorden: Berl. klin. Wochft., 1891, No. 4.
15. Maxwell: Ophth. Rev., 1903.
16. Gidney: Indian Med. Gaz., vol. xxxix, 1904.
17. Paton: Lancet, 1904, vol: i, p. 1121.
18. Doyne: Ophthalmoscope, December, 1905.

tissue in order to maintain the depth of the cul-de-sac. Another that the plate must be sufficiently large to carry the graft to the bottom of the groove in case sutures are not employed. Dr. Wilder's plate meets that indication fully. An artificial shield, as made by the men who make artificial eyes, is frequently not large enough and does not carry the graft sufficiently deep. In his opinion a plate which the operator can mold at the time of the operation is preferable, so that a paraffin plate made as Dr. Wilder has made it is a very excellent one. The plate made of gutta percha is also a good one. An advantage in Dr. Wilder's method is that sutures are not necessary. If the Wolff graft is used, sutures are necessary. He has operated on fourteen cases after the method described by him and they have been successful without exception. The earliest case is now seven years old and is all right. A fault with many operations is that tissue fills in from the bottom and the cul-de-sac is obliterated. Another advantage of Dr. Wilder's method is that both lids can be operated on at the same time. That can not safely be done by the method the speaker advocated. One other thing is the prevention of sepsis. The antiseptic precautions should be thorough. If this is well done there is no reason why the operation should not be successful.

DR. S. D. RISLEY, Philadelphia, has resorted to many methods and thinks this will probably be an improvement. Sometimes, however, simpler things work very well. His first attempt was with a celluloid plate, softened by placing it in hot water, and a sheet sufficiently large cut out, with three or four openings through it for drainage. Next he used a thin plate prepared in the same way. He used this to hold the graft in place and also as a shell in very young children where it was not possible for years to wear an artificial eye. On one occasion where he was compelled to resort to something on the spur of the moment, he employed sterilized protective, holding it in place by packing in cotton, and he has never had a case do so well as this one.

One of the important parts of the technic is the treatment the graft receives. These cells are very easily destroyed, especially by efforts to render the graft absolutely sterile. Chemicals that are destructive should be avoided. The physiologic salt solution is the one he always uses. He favors the Thiersch graft and always puts it in place from the razor without putting it into any fluid. Placing one end of the graft in contact with the wound, then pulling the razor away, it spreads itself out as though it belonged there. There is no need to fear its being washed away if the surface on which the graft is placed has been prepared carefully. The readiness with which these cut cells adhere to the denuded surface is remarkable.

DR. C. D. WESCOTT, Chicago, has seen Dr. Wilder operate by this method and vouched for the simplicity of the method as compared with others. He said that the plate can be made of almost any desired thickness by rapidly dipping it into melted paraffin, and manipulating the paraffin with the fingers as it is cooling. The shape of the Snellen can be closely imitated, if desired. The modeling wax of the dentists may be used instead of paraffin. It is a substance of higher melting point than paraffin.

DR. WILLIAM H. WILDER agreed as to the necessity of as perfect antisepsis as can be practiced in this locality, although the tissues here are much more resistant than elsewhere. Grafts will hold in the socket and on the lids that perhaps would not hold elsewhere. The chief advantage urged for this little measure is its adaptability. There is no question about the artificial eye itself furnishing an excellent plate for the graft, but it is essential to have something that can be adapted to the individual case. One of these plates can be made in five minutes and tried to see if it fits the socket. It can be made more prominent at one place than another to suit the individual case. Another advantage is that both lids may be operated on at the same sitting, but the precaution should be taken of making a good wide canthotomy to expose the field to view. Later a canthoplasty can be done.

Diabetic Insomnia.—Hutchinson gives twenty grains of strontium bromid and fifteen grains of antipyrin at night.—*Denver Medical Times.*

THE FETICH OF DISINFECTION.*

C. V. CHAPIN, M.D.
PROVIDENCE, R. I.

Disinfection in this connection refers to that sort which is commonly carried out by health officials after death, or recovery, from contagious diseases. The paper has no reference to that continuous attention to cleanliness—"medical antisepsis" the French call it—which is desirable in the management of contagious cases. This terminal disinfection, if one may so call it, occupies a high place in public sanitation. A reader of works on hygiene would conclude that disinfection is held in equal esteem with isolation, or is perhaps of even more importance, for it is sometimes expected to work wonders in the prevention of disease where there has been no isolation, as, for instance, the official disinfection after a case of tuberculosis when for years there may have been no attempt on the part of the patient to prevent the infection of others.

OFFICIAL DISINFECTION.

Official disinfection costs money and is annoying. Its only excuse is that it is believed to be an important factor in preventing disease. But is it an important factor, and is its practice based on good evidence of its necessity and value? It is to be feared that it is not. We do not disinfect because the utility of the process has been demonstrated, but because of precedent and authority. There can be little doubt that disinfection had its origin at a time when disease was believed to be the work of demons. Burnt sacrifices and fumigations with aromatics were among the means employed to appease the supernatural powers. The early practice of medicine was confined to the priesthood, and the final cleansing of the sick was largely a religious ceremony. This cult of purification by fire and smoke and libations has continued even to modern times. The attempt to give it a scientific basis is an afterthought.

REASONS FOR DISINFECTION.

Several arguments are advanced by the advocates of disinfection in support of the practice. Disinfection is necessary, it is claimed, because the virus of the disease becomes attached to material things such as clothing, books, toys, furniture and the walls and woodwork of rooms. On these things, it is said, it retains its life for weeks and months, and these infected things are, therefore, a very important factor in the extension of the contagious diseases.

That this is so is believed because numerous cases are on record in which infected things are assumed to have caused sickness. Reports are often made of diphtheria due to exposure in a room which had not been disinfected or due to contact with infected books or playthings. The virus of scarlet fever is supposed to be particularly tenacious of life, and we hear of cases due to the bringing out of infected clothing or furs which had been put away months or even years before. While accounts of such cases are often enough found in medical literature, they are, even if true, far from proving that such infected things are a really important factor in maintaining our common contagious diseases. Now, just here, I wish to make myself perfectly clear. I would not, in the present state of our knowledge, for a moment deny that clothing, books and even a room itself may be infected and may remain so for a considerable time, and then give rise to a fresh outbreak of disease. What I do claim is that reports of such modes of infection are rarely well authenticated, and even if it is admitted that such infection occasionally takes place there is no evidence that this is a factor of any moment in the extension of the contagious diseases, while there is a great deal of evidence that it is a factor of no consequence at all.

---

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

TRANSFERENCE OF DISEASE.

To return to the value of the evidence of the specific instances narrated of the transference of disease by infected clothing, bedding, toys, books, letters, etc., it is well to recall in this connection how firmly was established the theory that yellow fever was often transmitted by fomites. Any one who questioned this was laughed to scorn. The proof of it was felt to be conclusive by almost everybody. To sleep in a bed lately occupied by a yellow-fever patient would have been thought to be suicidal. Now we know that this has been done with impunity, and that clothing, bedding and letters are never carriers of the yellow-fever virus. Perhaps it would be well, then, to question whether or not an infected room really does cause diphtheria in its occupants, or a woolen coat transmit scarlet fever, or toys act as the bearers of measles. In most of the cases of alleged infection by fomites the fact is not proven at all; at best it is a possibility merely, not even a probability, and certainly far from a demonstration. The majority of cases of contagious disease can not be traced to their origin. Because a certain case develops soon after exposure to a supposed infected article is no proof that it was due to such exposure. As will be shown later, direct exposure to infected persons is the probable source of the infection in most cases of contagious disease. Unless this source of the infection can be fairly well excluded, it is merely an assumption to attribute the infection to things. A more critical examination of these cases would eliminate most of their value as evidence. After all, instances of apparent infection by fomites are rare. In my own experience of 22 years as health officer I have met with few of them, even in the earlier years of my practice, when I must confess I looked for them more carefully than I do now, since I have become satisfied of their unimportance. Doubtless all health officers will agree with me as to the rarity of cases in which it appears probable that fomites are the source of infection. Certainly no one could develop by induction, from their frequency, the theory that the contagious diseases extend chiefly in this way. It will not be claimed that the health officer practices disinfection because compelled to it by the frequency with which cases of fomites infection are brought to his notice. It is done for other reasons.

Probably one reason why so much importance is attached to thing infection is the large amount of discussion which is given to the question of the vitality of bacteria outside the body. Everybody has heard that anthrax and tetanus spores live for years, and, though it is generally recognized that most of the common disease germs do not belong to the spore-forming class, this great vitality of these exceptional types has had its psychologic effect. Bacteriologists have been very apt to report instances of maximum vitality of the organisms of pneumonia, diphtheria, plague and the like, but it is generally forgotten that these are the exceptions, and the impression remains that most of the bacteria given off from the sick retain their vitality and virulence for a long time, which is certainly not the fact.

But undoubtedly there is another and chief reason why the belief has become so well established that the virus of disease remains long attached to things, that these fomites are a most important source of infection; and that the contagious diseases can only be successfully combated by terminal disinfection. As was before stated, it has rarely been possible to trace more than a small proportion of cases of contagious disease to direct contact with others. Even in country places cases are constantly appearing without any visible connection with a previous case. In cities it is still more difficult to trace direct exposure to the sick, and so far as can be determined by routine examination the majority of cases of scarlet fever and diphtheria appear to arise spontaneously, or sporadically, as it was formerly called. Even in smallpox, which owing to its marked eruption and comparative rarity is easier to trace than almost any other disease, a large portion of cases appear to have no connection with previous cases. To explain the origin of these cases has been the chief problem of sanitary science. At one time it was believed by many that the virus of most of the contagious diseases could develop outside of the body. Hence the filth theory of disease, which, although now entirely discredited, still has great influence, even among sanitary officials.

THE SPECIFIC VIRUS THEORY.

The hypothesis which next appealed to workers in this field was that the specific virus, though incapable of growing outside of the body, could yet retain its vitality for a considerable time, and, attached to various articles, be carried unnoticed to great distances. It must be admitted that this is a very natural and reasonable hypothesis and is supported by many of the findings of bacteriology, and by certain clinical observations. A dozen years ago it was really the only working theory that we had. Of course, if its probability is admitted, disinfection must necessarily follow. This, I take it, is the true reason why for so many centuries disinfection has played such an important part in preventive medicine. It was the only means for controlling that mode of infection, which appeared to be the principal factor in the maintenance of the contagious diseases.

ORIGIN OF DISINFECTION.

Disinfection had its origin in superstition, and its practice so partakes of the character of magic art that it catches the popular fancy. Even if the health officer does not disinfect, the infected family is quite likely to sprinkle a little sulphur on the stove, or place a saucer of chlorid of lime behind the door. Thus unconsciously do we follow the customs of our remote ancestors who exorcised the demon of disease with incense and incantation. Here we have another explanation of the vogue of disinfection.

SCIENTIFIC ARGUMENT IN FAVOR OF DISINFECTION.

Let us now examine into the principal scientific argument in favor of disinfection, i. e., that infection is spread chiefly by things. As was before stated, this theory was the outcome of the attempt to explain the origin of that vast number of cases of contagious disease which could not otherwise be accounted for. But within the last dozen years a multitude of facts have come to light which renders this theory unnecessary. It has always been recognized that mild and atypical cases of contagious disease are occasionally seen. Scarlet fever without eruption, mild sore throat diphtheritic in nature, and walking cases of typhoid were mentioned by the older writers; but they were not believed to be common, and little account is taken of them in the textbooks. To-day the majority of physicians are skeptical about the diagnosis when they see an almost afebrile scarlet fever with slight, fleeting rash, or diphtheria without exudation and the patient not confined to the bed; yet those who have studied these diseases most closely know that the mild, atypical cases are extremely common. Even in smallpox, a disease with more characteristic symptoms than any other, mild, unrecognized cases are very numerous. If one examines the reports of health officers of the past few years, it will be found that the frequency of these mild cases is dwelt on, and to them is attributed the origin and maintenance of most of the local outbreaks. The report on typhoid fever during the Spanish war indicated that mild, unrecognized cases were twice as numerous as the recognized cases. In investigating this disease in a small rural community Koch found scores of cases which the attending physicians failed to recognize, or to which no physician was called. Instance after instance is recorded in which a mild sore throat has been the starting point of an outbreak of diphtheria. In Hartford, of 2,038 apparently benign sore throats found in children at school, 29 per cent. were shown to be true diphtheria. The English, who often isolate as high as 90 per cent. of their recognized scarlet fever cases in hospitals, and nevertheless continue to have as much of this disease as we do, attribute their failure to control the disease to the existence of so many mild, unrecognized cases. In fine, we now know that there is a vast number of atypical, unrecognized cases of contagious disease, sometimes exceeding in number the known cases.

CARRIER CASES.

We have learned that there is still another factor to be reckoned with. It is now well known that the pathogenic bacteria often grow in human beings without producing any symptoms of the disease. After recovery, the specific bacteria may continue to develop for weeks, months, and even years. Not only that, but they are found also in persons who have never been sick at all. These are what the English call "carrier" cases and present no symptoms. They are even more numerous than the mild cases of illness. Such carriers have been found for diphtheria, influenza, cerebrospinal meningitis, typhoid, cholera, the plague, and many other diseases, and the wide distribution of the pneumococcus is known to everybody. In the protozoan diseases, as malaria, trypanosome diseases and Texas cattle-fever, individuals often carry the infection in the blood and show no symptoms. These facts receive scant recognition in most text-books, even those on bacteriology, and are entirely ignored by nearly all writers and lecturers on clinical medicine and sanitation, yet they are of the utmost significance. In these mild cases and living "carriers" we have the real source of contagious disease.

BACTERIOLOGY.

What does bacteriology tell us about this matter? The direct evidence as to the infection of things is scanty. It must be admitted that there has been very little investigation of this question, although it lies at the basis of sanitary theory and practice. Examinations made in Providence, and by Hill, in Boston, show that diphtheria bacilli are rarely found, even on objects most likely to be infected by the patient. Tubercle bacilli are more tenacious of life than most common bacteria, yet search made for them on floor and walls, where they are most likely to be expected, usually fails to reveal them. It is not easy to find pathogenic bacteria outside of the body. While it is true that bacteria, especially certain resistant kinds, like the tubercle and typhoid bacilli, may occasionally live for some months when removed from the body, it is nevertheless true that all non-spore-forming pathogenic bacteria tend to die off, and that quite rapidly, when so removed.

This whole question may be summed up very concisely. Which is the more likely to be the chief factor in the extension of contagious disease: inanimate objects hypothetically infected with dying bacteria, or living and moving human beings who are continuously throwing off living bacteria? It must be admitted that fomites may spread disease; but, if we reflect how unlikely infected things are to be brought in contact with people and how great the chance of human beings coming in contact with each other, it seems very unlikely that fomites can have appreciable effect in the spread of disease.

FUTILITY OF DISINFECTION.

If then, as all evidence tends to show, contagious diseases usually extend by means of pretty direct contact between the infected and non-infected, and transmission by fomites has little influence on such extension, it follows that even the most thorough disinfection will have little effect in checking these diseases. There is certainly no rational basis for making it such an important feature in public health work, and holding it of equal value with isolation.

Another thing to be borne in mind in connection with this subject is that a good deal of disinfection does not disinfect.

Until eight or nine years ago sulphurous anhydrid was the chief disinfectant, and this is now considered to be entirely unreliable. Then formaldehyd came into use and at first most of the disinfection with it did not accomplish more than the sulphur. Even now a great deal of formaldehyd disinfection is inefficient, and at the best only exposed surfaces can be disinfected. As the larger part of the clinical evidence of the value of disinfection dates from a time when the process was very imperfect, the value of that evidence is much impaired.

In Providence we have been making a practical test of the value of disinfection by omitting it entirely in some cases. It seems useless to disinfect an apartment unless we can be fairly sure that its occupants are not propagating the germs of disease. In diphtheria we can have no reasonable assurance of this without getting at least two negative cultures from the nose and throat of every member of the family. To require such cultures is impracticable. Disinfection, however, is refused after diphtheria, unless the above-named reasonable conditions are met, which very rarely happens, or unless it is especially requested after a death. During the last year the warning card has been removed 258 times without disinfection, and there has been a recurrence in the family within two months in four cases, or 1.55 per cent. In 87 instances in which disinfection was practiced during that period or a few months preceding it, there was a recurrence in 2.3 per cent. of the cases. The total number of cases of diphtheria fell, however, from 780 in 1904 to 562 in 1905.

It may be asked: What objection can there be to disinfection even if it is not so important as has been thought? Aside from the question of expense, which is by no means unimportant, there is a decided objection. The confidence which the public has in the efficacy of disinfection is the greatest hindrance to the development of better methods of handling disease and guarding against infection. To practice strict personal cleanliness, not only in the presence of contagious disease but at all times, is the sole mode now known in which the unrecognized cases and the "carrier" cases can be guarded against. The public, and even the medical profession, refuse to believe in infection in well persons, but cling to the old notion that it is things, not persons, that are to be feared. And they will cling to this view so long as health officials lay so much stress on their official disinfection. Many a time a family has lived for months with a consumptive who has taken no precautions about his sputum, and after his death has promptly asked to have the house fumigated. The expiatory sacrifice of disinfection is believed to atone for every sanitary sin. It is our duty to teach that hygienic salvation can only be attained through the good works of personal cleanliness. As the surgeons have given up antisepsis for asepsis, so the health officer must substitute cleanliness for disinfection.

SUMMARY.

As a brief summary of the argument and the conclusions to which it leads, it may be said:

1. The pathogenic bacteria tend to die rapidly after discharge from the body.
2. There is very little bacteriologic evidence that things remain long infected, and, therefore, contact between the non-infected persons and the infected things must be very direct and very close in point of time if the things are to transmit the infection.
3. Clinical evidence of the necessity for disinfection is wanting.
4. The true explanation of the spread of contagion is the great number of unrecognized, atypical and "carrier" cases.
5. Infected persons, not infected things, are to be feared.
6. Disinfection, that is, official disinfection as a final precautionary measure, has little value in preventing the spread of the common contagious diseases.
7. This sort of disinfection is a powerful factor in preventing sanitary progress, by encouraging belief in discredited theories.
8. While it is by no means advisable to abandon disinfection entirely, it should not be made so important a part of public health work, and should not be insisted on unless it is practically certain that no member of the household remains infected, and should be refused when it is probable that any member of the household is so infected.

DISCUSSION.

Dr. Clarence L. Wheaton, Chicago, declared that if we accept the theories advocated by Dr. Chapin, the germ theory must be overthrown. Dr. Wheaton said that it has been demonstrated by bacteriologic examination that the dust on the walls of rooms occupied by tuberculosis patients contains, at times, bacilli; and that it has been possible to make cultures of these germs, proving it absolutely. The same, he believes, is true in cases of diphtheria. Now it would be almost malpractice, he declared, to leave these homes without proper disinfection.

Dr. W. F. Morrison, Spokane, Wash., declared that if Dr. Chapin's ideas of sanitation and disinfection are adopted, we will very soon be followers of Mother Eddy. As a health officer of four or five years' experience, Dr. Morrison said that he has had quite a good deal to do with contagious diseases. He has seen the spread of contagious disease more frequently when disinfection has not been performed than when disinfection after the good old-fashioned method of first cleaning the body, then cleaning the clothes and then disinfecting the house goes hand in hand; and if the clothes are left unwashed, uncleaned and undisinfected, and only the individual is cleaned, the individual may be clean, but the house from which the individual comes (if there is any sense in the germ theory of disease) is still full of living germs; and if one goes into that house and stays long enough and is not immunized he will get the infection. Not everybody gets any infection; thousands of people escape who are immune; thousands of people are immune to everything. Every day of our lives we see the most filthy people escape all forms of disease. Among the indigent in obstetric work physicians see the most abject filth, and yet comparatively little contagion arises from it; and women get up in three or four days and go to work apparently well. In Dr. Morrison's opinion we must not only disinfect the patient with soap and water, but must also disinfect the house from which the patient comes by some approved disinfecting agent. The things must be combined. Dr. Morrison asked if a surgeon who washes his hands with water and makes them as clean as he can, not using approved disinfecting agents, in preparing for a surgical operation would be clean or fit to operate on a patient. If so, the germ theory of disease, he said, is of no value whatever. Providence, he said, has been exceedingly kind to the people of Rhode Island, but Dr. Morrison does not believe the rest of the world can safely follow their example at the present time with the present knowledge.

Dr. S. A. Knopf, New York, declared that there is a happy medium, that we need not go to excess, but we should clean the patient and clean the room. In regard to tuberculosis, he said that he could not accept the idea that the patient is more of a danger to his fellow men in the first stages of the disease. Dr. Knopf thinks that the patient who is up and about, expectorating everywhere, is more of a danger than the one confined to his room, who is only a danger to the few people who are in that room. Dr. Knopf declared that he knows of a number of cases in which the walls have been infected through careless expectoration and in which people who have moved into these rooms without having them previously disinfected have contracted the disease. In his investigations of prisons Dr. Knopf has found prisoners who have contracted tuberculosis in cells where other prisoners who had suffered from this disease had remained for a number of years. Simple whitewashing was not enough to do away with the infection. Examination of the dust from the walls showed the presence of the tubercle bacilli. Dr. Knopf said that he is not a specialist in typhoid fever, but he would not wish to have the linen of a typhoid patient put with other linen without previously disinfecting it. Certainly he would never use the handkerchief of a tuberculosis patient, even though the patient had never expectorated in it, but simply wiped his nose and mouth with it. In tuberculosis, Dr. Knopf said, we must not forget the rôle of flies in the transmission of the disease. The ordinary house-fly will take up tuberculosis matter and deposit its excrement on the walls, and it has been demonstrated, Dr. Knopf said, that the excrementitious matter from flies which had been in a room with tuberculosis patients when injected into animals led to tuberculosis. Therefore, he said, physicians should not teach that disinfection after death is not just as important as prevention while the tuberculosis patient is alive.

Dr. H. D. Holton, Brattleboro, Vt., said that in the exposure of a hundred people to any contagious disease perhaps not more than forty would come down with it. Why? We do not know. We say their systems were not susceptible at that time. It is very difficult to trace the source of contagion. We do not know, a great many times, where scarlet fever comes from. Dr. Holton sometimes finds out months afterward from some slight circumstances, but he has seen repeated evidences of its contagiousness. He carried it home, he believes, to his own little girl many years ago. He was visiting a man, and a little girl was playing with some toy acrobatic men; she was dovetailing them together and Dr. Holton assisted her and handled them while talking to the man. He went home and his little girl urged him not to go into the office, as his supper was ready, so he picked her up and carried her into the dining-room. In five days she was down with scarlet fever. On investigation it was learned that these toy acrobatic men had been used by the other child to amuse her while recovering from scarlet fever. Dr. Holton has always believed that taking these toys and gathering from them the loose collections in the dovetails, which, under the microscope, proved to be epithelial scales, was the source of his daughter's scarlet fever. Contagion occurs in different ways. Dr. Holton believes that it comes from walking cases of diphtheria, scarlet fever and measles. He has seen these patients without any eruption at all, and yet they communicated the disease. We see typhoid-fever patients walking around; there is no question about this. The first case of typhoid fever that occurred at Chickamauga Park came from a soldier from Vermont, who enlisted from a town where there was polluted water and typhoid the year round. Dr. Holton believes that the soldier carried that germ in his body; by exposure and changed methods of living he developed typhoid fever. Not every person who, having tuberculosis, is not careful about sputum communicates tuberculosis. We know that it may be communicated in just that way and that not to exercise care and caution would be criminal. We used to see a wife whose husband had died with tuberculosis and who had nursed him through his illness develop the dread disease. Shall we say that it is not demonstrated that the disease was communicated to this devoted wife by bacilli from the sick husband? If so, Dr. Holton said, we must give up all the theories that we have held. It is possible, he said, that Dr. Chapin did not really mean to give us all the ideas that we absorbed. He is very forcible in expression and his hearers may have taken a little more than he intended.

Dr. J. N. Hurty, Indianapolis, said that he still believes in disinfection. He can not throw it aside. It seems to him that beyond doubt some diseases are carried by fomites. He holds to the belief that scarlet fever may be so carried, and he believes that typhoid fever may be carried by infected clothing. It should be disinfected. Disinfection carries with it a psychic effect which is worth much. He declared that disinfection may be relied on with too much confidence. An individual or a head of a family might say, "My house has been disinfected and I need not be clean." Again, disinfection might bring calmness of mind and satisfaction with conditions, which is not without worth. Dr. Hurty would prefer to have clothing disinfected, even in yellow fever, not to stop the disease, but to satisfy the desire of the mind for perfect cleanliness. Although he knows perfectly well the method of transmission of that disease, still he said that he would prefer to have yellow-fever clothing disinfected. In reference to Dr. Chapin's remark about the tendency of pathogenic organisms to die, Dr. Hurty said that he was taught that the unicellular organisms are immortal. They do not die; they are destroyed in untold millions by various agencies, such as light, air and disinfectants, but their duration of life is not limited by the needs of the species, as in the case of multicellular organisms. He said that this paper will make us think on this subject, and by thinking and by study we will finally arrive at a correct solution of the problem of disinfection. He said that he will now study this subject with new zeal and with greater earnestness.

Dr. A. D. Lake, Gowanda, N. Y., said that the departure of Dr. Chapin from our accepted belief has been so decidedly radical that it seems to him that Dr. Chapin must more thoroughly substantiate his position before he can ask others to agree with him. To take his view of the matter is to revolutionize all of our long and well-established ideas of the value of disinfection. That disinfection is most potent in its power to destroy disease germs was, perhaps, first illustrated in the history of the plague in London. This terrible disease hung like a pall over the city for many months and thousands died therefrom. In the midst of its devastation occurred the great fire, which swept away one-fourth of the buildings of the city, and through this thorough disinfection the further extension of the epidemic was prevented. It was probably the only means, in those days, whereby the awful mortality could have been controlled. As an illustration of the danger of infection from contaminated clothing, Dr. Lake mentioned the following incident: About three years ago a case of scarlet fever occurred at the Thomas Indian School, where about 150 children are maintained by the State of New York. The first patient, a girl, had been taken from another institution, about thirty miles away, where she had been retained for a short time only. It was learned that just previous to her stay there some cases of scarlet fever had existed at the same institution. The disease developed three weeks after her arrival at the Thomas School. It was found that about a week before the attack began some clothing was sent her from the other institution, and a dress which had been worn by a girl who had died of scarlet fever was included in the bundle. This dress was given to her and she wore it at the time she was taken sick. It is well to state that this dress had been hung in a closet and forgotten when the other garments were disinfected. This one case, it seems to Dr. Lake, settles the question of the importance of disinfection and the danger of conveyance of disease through infected clothing.

Dr. D. M. Totman, Syracuse, N. Y., declared his belief that Dr. Chapin is dealing a great deal in theory. Dr. Totman said that he was attending a child who had a very bad throat. He diagnosed the case as a possible case of diphtheria. This was before the certain methods of diagnosis of the present day. He took great care for a few days and kept entirely away from his children, as he always does in such contagious diseases as diphtheria or scarlet fever. Suddenly the child apparently recovered without any other trouble. He saw the child and it appeared perfectly well in the afternoon, about 5 o'clock, and he believed that he had been mistaken about the case and that it was not diphtheria. He put on his overcoat, buttoned it up and went home. He went directly to the room where his little girl was, took her in his lap, opened his coat, held her and kissed her. In five or six days she came down with a typical case of scarlet fever. It was a seven-days' wonder to Dr. Totman how she could have contracted it. In the proper time (five or six days) his other little girl came down with the same disease. She was very ill. He looked for a rash. His daughter had a little rash on the back of her neck only. He visited the first child and found the desquamation of a typical scarlet-fever case of three weeks' standing. Dr. Totman said that nothing can ever convince him that he did not carry that scarlet fever in his clothing.

Dr. Wallace Clarke, Utica, N. Y., asked Dr. Chapin to define cleanliness. He asked if it is the strong, stalwart scrubwoman, with her pots and pails and liquid disinfectants and soap and water, or is it the introduction into the room of something that will reach every particle of the room as no liquid disinfectant will. He said that this question came up three years ago before the sanitary convention of the State of New York, when the health officer of Rochester introduced exactly the same idea. With regard to cases, he said that he had just been through an epidemic of scarlet fever, lasting two and a half years; it is not over yet. There have been over a thousand cases. In one institution where the officials struggled against scarlet fever very strongly they finally conquered it. Then the building in six or seven weeks was thrown open to visitors again to come and see their children. In the meantime the epidemic was prevailing in the city. Within a short time there was a repetition of scarlet fever in that institution. Visitors were again shut out and again it was got under control and the building thoroughly disinfected, as it was after the first attack. No one was allowed to visit the building, and the inmates were in no way allowed to go out or to communicate with people where they might catch the disease; still, in about two months the disease reappeared. Here was another faulty disinfection, apparently, or a useless disinfection. The cause was looked for and it was found that clothes which had been used in a scarlet-fever ward had been put in a hamper and put in a closet in the laundry. That closet was not reached in any way by disinfection. Missing those clothes, the laundry woman remembered they were in there and sent one of the boys to the room to take the clothes to the laundry. That boy developed scarlet fever seven days afterward. Dr. Clarke would ask Dr. Chapin as to the time limit when he would admit outsiders into a room where there had been, say, scarlet fever.

On the subject of disinfection Dr. Clarke said that formaldehyd is his favorite agent, but he finds that a large body of men do not know how to use it properly. They disinfect the houses and neglect the kitchens, and they forget to disinfect pet animals in the house, and then they claim that disinfection is complete. When a house has been disinfected Dr. Clarke disinfects every one in the kitchen; finally the last person disinfects the kitchen, some outsider disinfects the last-named disinfector and the disinfection is complete—and that in the presence of a great deal of moisture. One may have a disease in a house—scarlet fever or diphtheria—and not disinfect, and have no repetition of the disease. But Dr. Clarke declared that 91 per cent. of individuals are immune to measles and 33 per cent. to scarlet fever. All physicians know that the mere non-disinfecting of the house shows that immune people as a rule have invaded that house afterward or they would have acquired the disease.

Dr. Charles S. Williamson, Chicago, in regard to the question of disinfection, advised looking at the disease in the same light as tuberculosis, and referred to the experiments of Cornet. In these experiments he said that we know that the infection comes from only one source: the expectoration of some infected individual. Now if a patient has been living in a room and has been coughing, even if he has not been deliberately expectorating, little droplets of sputum may be deposited over the entire room, even to the ceiling. If then, Dr. Williamson said, disinfection is unnecessary, we must admit that this whole area is unaffected and incapable of transmitting the infection; yet many experiments have demonstrated that Pullman cars, cabs, etc., are infected in a large number of cases. Dr. Williamson called attention to the fact that all physicians are coming to recognize the importance of house epidemics of tuberculosis and said that these can occur in only one way. He mentioned some of the conditions in Chicago: Some tramp gets tuberculosis; he goes to a lodging house and expectorates over everything. When investigating instances of tuberculosis it is found that certain houses produce overwhelming numbers of cases. They are not borne in and wafted from the windows; they did not come down from heaven; they are infected by that particular area indirectly from that particular patient. Dr. Williamson said that this is not a matter for academic discussion; it is the most important thing that physicians have to face. He said that for the safety of the people it is necessary to disinfect these houses. When disinfection is improperly done he said that it is usually the fault of the politician who does it. He declared that negative results can be explained by the fact that a great many health officers go through the thing perfunctorily. The disinfection is not carried out in the spirit nor even in the letter. Dr. Williamson said that he tells his patients that he will attend to the disinfection and that they are not to turn it over to the health officer. Under these conditions the danger of contagion, he believes, is brought down to a minimum. He said that seven years ago he had the opportunity of assisting in a large number of bacteriologic experiments on dust collected from different pavilions in the same hospitals. It was found that in the surgical division, where a large number of infected cases had been harbored, but where good asepsis and disinfection had been carried out, the infective quality of the dust was very slight. In other words, injection into guinea-pigs, rabbits and white mice in a considerable number of cases did not produce infection; but in the medical ward (and in this particular hospital it was done to emphasize to the medical people the necessity of disinfection) a perfectly overwhelming amount of infectiousness was found in the dust; it was found also that almost every animal inoculated died from streptococcus infection, pneumococcus or miliary tuberculosis. No amount of sophistry can gainsay results of this kind, because they are definite and clean-cut. Somebody will say no patients there took any disease. It is not known that in this particular medical ward some poor fellow who was convalescent did not go out and die of tuberculosis that he had acquired there from the dust. It is known that the dust was there and that it was capable of infecting animals with tuberculosis, and, therefore, probably capable of infecting man. All the negative evidence does not prove anything at all; it is the positive result which counts

Dr. G. F. Patton, New Orleans, said that it has been his fortune to be in the forefront of the battle in all the yellow-fever campaigns in the section where he lives. He began that service under the régime of the Louisiana State Board of Health in office in 1877. The disinfection of that day, he said, might well be styled fetich worship. It consisted in walking backward and forward with a garden sprinkling pot and scattering carbolic acid solutions on the suspected fomites. The system of maritime quarantine then in force actually invited an invasion of yellow fever by disregarding the incubation period of the disease and trusting blindly to disinfection with carbolic acid, after which hundreds of passengers not more than three days from Havana were admitted to New Orleans up to the beginning of June without any detention for observation. Dr. Patton said that while we all agree in condemning idolatry, there is no one who will seriously propose that the human race shall throw aside all forms of religion because some of those forms savor of fetich worship. The majority of physicians are convinced of the utility of disinfection in dealing with certain infectious diseases. Let us, therefore, he said, accept the logic of the situation as being simply this: that everything connected with disinfection that consists of useless formality be thrown to the winds, but that we can not afford to forget or to ignore the fatal lessons of the past as regards the conveyance of such diseases as erysipelas, diphtheria and scarlet fever by fomites. The evidences of such transmission are too overwhelming and we can not get around them by argument. Dr. Patton said that there is common ground on which others can meet Dr. Chapin. Though all physicians can not accept the doctrine which he advocates *in toto*, still they will agree that the fetich of disinfection which has held the medical profession in bondage for so many years, and has led to untold disasters, is now a thing of the past, and that henceforth our efforts will be to apply disinfection strictly in accordance with the revelations of modern science. We have got rid of senseless disinfection in dealing with yellow fever. That fetich is overthrown, Dr. Patton said, and he is a convert to the doctrine that the disease can be conveyed only by the stegomyia mosquito. We still have with us all the time such diseases as scarlet fever, diphtheria and erysipelas, and we can not get around the fact that they seem to be carried by fomites. Therefore he considers it our duty to act on that belief until very much stronger argument to the contrary is brought forward than has yet been presented.

Dr. Seneca Egbert, Philadelphia, said that in spite of the fact that he does not believe that Dr. Chapin has convinced any one that disinfection is not wise nor necessary, he feels that the doctor has some of the logic of the question on his side. Prophylaxis includes all the methods that may be used to prevent disease, and we can divide the work of prophylaxis into two parts: disinfection, which gets rid of the exciting causes of disease, and that greater function, sanitation, which has to do with the removal of the predisposing conditions. Dr. Egbert declared that Dr. Chapin has in his favor the fact that physicians are doing a great deal of harm in giving the public the idea that disinfection is the thing of most importance in our efforts to eliminate infectious diseases. Physicians still have a great deal to do in teaching people that they can increase their own personal vital resistance by the many ways of sanitation, and that they can thus very greatly lessen the incidence of infection and the consequent number of cases of disease. Dr. Egbert does not agree with Dr. Chapin that it is wise to do away with sanitary disinfection. He believes that every infected place should be thoroughly disinfected; and that word "thoroughly" means a great deal, and a lack of thoroughness covers a multitude of sanitary sins. Though physicians do not accept Dr. Chapin's ideas as regards the wisdom or advisability of doing away with disinfection, they ought not to lose the idea that the importance of sanitation should be impressed on the public and that every means should be used to educate the people to increase their vital resistance and to make themselves immune. Dr. Egbert said that he feels from his own experience that the laity certainly (and sometimes even medical students) do not get that idea from us as forcibly and persistently as they should.

Dr. Charles V. Chapin, Providence, R. I., explained what he meant by "cleanliness." In some of the Paris hospitals for a few years past they have been treating cases of scarlet fever, diphtheria, measles, smallpox, in what is practically the same ward. The same nurse has gone to a case of scarlet fever and then to a case of diphtheria and then to a case of measles. They have done that without the disease extending from one to another, except in a very few instances—far less often than occurs in most contagious hospitals. That is done by the nurses practicing, as they leave one case and go to another, the same sort of personal cleanliness that surgeons practice in their work. Medical antisepsis is what is needed in the care of contagious diseases. Dr. Chapin wants all people to treat contagious disease exactly in that way, and he never can get them to do it so long as they believe that they can treat it as carelessly as they please, and when they get through call on the health officer to fumigate and thus stop off all sources of danger. He thinks that the psychic effect of disinfection is wholly bad.

He said that instances (usually one) have been mentioned in which it seemed that a disease was transmitted by clothing or some other inanimate object. Dr. Chapin said that he did not deny that every single one of those cases referred to was caused in just exactly that way, but he would be entirely justified in doubting it, because no one presented any stronger evidence than the physicians who mentioned such cases in connection with yellow fever, and we now know that there was not the slightest basis of fact in any single one of those cases. The sole question we have to consider, he said, is whether or not that mode of dissemination of disease is an important factor in the maintenance of contagious disease in the community. He does not think that the advocates of disinfection have substantiated their theory that fomites are an important factor. This subject can only be settled in a statistical manner, and the collection of statistics is very difficult. There is no question but the chance of transmission in the ways suggested is greater in tuberculosis than in any other of the common diseases we have in this country. Dr. Chapin said that physicians often hear about cases of tuberculosis contracted in an infected house, but he has never seen that any infection in the lung diseases comes from the house, except in the living beings who are the occupants of the house. The men who advocate this theory of transmission by fomites should present evidence which is unimpeachable to support their view.

Dr. Chapin said that he believes in disinfection when there is reason. He thinks that we must treat different diseases in different ways. In his paper he said he referred chiefly to the routine work of the health officer in this country, and especially in the common diseases, such as scarlet fever, diphtheria, tuberculosis, typhoid, measles. He thinks that we should have disinfection in certain cases. In pandemics, suppose a person has been sick in a house for some time; no care has been taken; the patient is removed by death or otherwise; now if another and well family should come into that house he thinks that the house should be disinfected—not by the disinfection of sulphur and formaldehyd, but by elbow grease and soap and water. Even without this disinfection he thinks that the danger of infection of the second family is very slight. However, nine-tenths of the disinfection done to-day after tuberculosis is, he maintains, where the patient has been sick with the disease and has remained in the family until removed by death, and the family is going to remain right in the same house; no precautions have been taken during the long course of the disease and they expect fumigation or disinfection by the health department is going to help them to atone for all past sins of omission. He said that it is wrong for him to do it and to confirm them in the wrong idea. Again, he is called on at times to disinfect for tuberculosis when the greatest precautions have been taken over a period of months or years. It seems to him that there is no use for it, that it is possible for a tuberculosis patient to live in a room with others and to work with them and not to infect them if he will only take care of his sputum. If that is true, there is no necessity for disinfecting a house which the patient has taken care to disinfect, or, rather, not to infect. Practically, Dr. Chapin said, when the danger of infection is greatest there are very few cases in which disinfection is of the slightest good.

In diphtheria there is no question but that in a majority of cases it extends by means of bacilli in the throats and noses of well people or of convalescent people, and it is perfectly absurd and wicked, he said, to disinfect a house where there has been diphtheria unless we are very sure that the people who live in the house are no longer infected. It is possible for us to learn whether or not the people are infected. Isolation can not always be maintained in diphtheria until the physician is sure of non-infection; and, therefore, in Providence the plan of not disinfecting simply as routine was adopted. If any family wants disinfection they have to subject their throats and noses to two or more tests by culture and show that no bacilli are present. Dr. Chapin believes that the common contagious diseases are almost entirely carried by the direct contact of sick persons and infected well persons with the well; that is, by persons and not by things; and if that is so, disinfection of things, no matter how well carried out, can have no appreciable effect in checking the spread of these diseases. He believes that if to-day in the United States disinfecting after scarlet fever, diphtheria and tuberculosis should be stopped, it would not have the slightest effect on the prevalence of these diseases.

STUDIES ON PHAGOCYTOSIS.*

D. H. BERGEY, M.D.
Assistant Professor of Bacteriology, University of Pennsylvania.
PHILADELPHIA.

The studies of Leishman, of Wright and Douglas, of Neufeld and Rimpau, of McFarland and Engle, and of others, have opened up a new field of investigation for the elucidation of the problem of the mechanism of immunity. The experiments that have been reported thus far have dealt almost entirely with the opsonic powers of the blood serum against staphylococci, streptococci and pneumococci, and the observations have been made exclusively on the phagocytic powers of the polymorphonuclear leucocytes, or the microphages of Metchnikoff.

It seemed desirable to ascertain whether the opsonic power of the serum was efficacious against other classes of micro-organisms, and also whether the macrophages of Metchnikoff participated in the phagocytosis. Metchnikoff himself states that in the resorption of animal cells in general it is especially the macrophages which intervene, but in natural immunity against micro-organisms positive chemiotaxis is exhibited by the microphages more than the macrophages. He states that the sensitiveness of the two chief categories of phagocytes often exhibits a marked difference and that spirilla, for example, are ingested and destroyed exclusively by the macrophages of the guinea-pig which alone exhibit the necessary positive chemiotaxis. In many other examples of natural immunity the part played by the macrophages is masked by that of the microphages.

My own experiments were carried out with the peritoneal exudate of guinea-pigs following aleuronat injections. This exudate was mixed with equal quantities of .85 per cent. sodium chlorid solution and then added to the various bacterial suspensions in equal proportions in capillary tubes. These tubes were incubated at from 34 to 36° C. for thirty minutes when smears were prepared and the number of bacteria taken up by 20 microphages and by 10 macrophages estimated. For each test on such a peritoneal exudate fresh bacterial suspensions were prepared which contained as nearly as possible equal numbers of bacteria, but no attempt was made to have an equal number of bacteria for the several tests, so that the suspensions used for the different exudates did not contain equal numbers of bacteria.

A series of ten observations was carried out on the exudate obtained from ten different animals by employing the following cultures: *Bacterium pseudodiph-*

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

theriticum; two cultures of *Streptococcus pyogenes*, one from urine and from the throat of a case of scarlet fever; *Micrococcus catarrhalis; Micrococcus pyogenes albus* and *Micrococcus aureus*. The results obtained in these ten observations are shown in Tables 1 and 2, Table 1 showing the average number of bacteria taken up by the microphages, Table 2 showing the average number of bacteria taken up by the macrophages. While there is considerable variation in the results obtained with the different exudates it will be seen that in a fairly constant degree the macrophages had taken up a greater number of bacteria than had the microphages. This fact is shown more definitely in the means of the ten observations in the last column of each table.

TABLE 1.—MICROPHAGES AS PHAGOCYTES.

Culture.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	M.
Bact. pseudodiph	0.7	0.4	1.0	1.5	4.3	2.8	0.8	0.4	1.1	0.5	1.46
Strept. pyog (urine)...	7.2	1.1	1.1	1.0	3.6	4.1	4.6	2.5	4.7	4.6	3.45
Strep. pyog. (scarlet fever)	4.4	0.4	2.2	9.0	6.4	3.8	1.1	3.8	4.3	3.7	3.91
Mic. pyog. albus.......	1.5	0.5	2.0	4.3	4.5	3.0	1.7	0.7	0.8	2.7	2.17
Mic. pyog. aureus......	1.8	0.6	1.9	5.0	4.2	6.0	3.0	3.4	2.6	4.5	3.30
Mic. catarrhalis........	1.5	8.2	0.4	9.2	4.0	6.2	1.5	3.1	2.6	2.3	3.90

TABLE 2.—MACROPHAGES AS PHAGOCYTES.

Culture.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	M
Bact. pseudodiph.	1.3	0.4	16.2	9.4	6.3	5.0	2.6	1.7	4.4	1.3	4.86
Strept. py. (urine)	3.7	6.2	10.7	4.3	1.6	6.9	4.4	4.1	15.0	15.0	7.91
Strep. pyog. (scarlet fever).	23.4	5.0	2.4	4.0	2.1	5.4	5.4	1.6	5.3	12.2	6.78
Mic. pyog. albus.	3.2	0.4	5.5	3.3	2.3	8.9	5.6	1.2	0.6	3.1	3.41
Mic. py. aureus	7.4	7.5	0.8	15.0	4.1	4.3	3.2	21.2	4.0	15.4	8.29
Mic. catarrhalis.	2.9	1.1	0.6	3.0	1.9	18.7	4.4	6.5	2.0	4.0	4.51

A second series of five experiments was undertaken with the view of ascertaining the range of bacteria susceptible to phagocytosis under similar conditions. For these observations the following organisms were employed: *Micrococcus aureus; Microspira schuylkilliensis;* and *Bacillus dysenteriæ*, Shiga. The results obtained in this series of observations are shown in Tables 3 and 4. These results are too few in number and too erratic to warrant the formulation of any definite deductions. In several instances no phagocytic action could be demonstrated, and doubt existed usually whether the spirilla and dysentery bacilli were really within the phagocytes or were merely lying on them, or adherent to their exterior. The results indicate that the opsonic power of the blood serum is much more pronounced for those bacteria which induce septicemia than for those in which a more distinct bactericidal immunity is induced.

TABLE 3.—MICROPHAGES AS PHAGOCYTES.

Culture.	1.	2.	3.	4.	5.
Mic. pyog. aureus.................	4.4	2.0	0.8	2.0	2.5
Mc. sp. Schuylkill	0.5	0.1	0.15	0	5.2
B. dysenteriæ	0.6	0.6	0.7	0.6	3.0

TABLE 4.—MACROPHAGES AS PHAGOCYTES.

Culture.	1.	2.	3.	4.	5.
Mic. pyog. aureus.................	7.2	2.0	1.6	2.5	0.5
Mc. sp. Schuylkill	8.6	0.6	0	2.6	6.2
B. dysenteriæ	3.0	0	2.3	0	3.0

Paralysis of Ocular Muscles After Lumbar Anesthesia.—Loeser of Berlin publishes in *Med. Klinik* for March 11 reports of 3 cases of paralysis of the ocular muscles observed after spinal analgesia. The first patient was a man of 45, operated on for hydrocele. The evening after the operation, while healing was progressing smoothly, intense headache developed and vomiting. The headache continued, and when the patient got up for the first time on the fifth day, he presented symptoms of trochlear paralysis on the right side. Recovery was complete in a week or so. The second and third patients had been operated on for hemorrhoids or hernia under stovain; spinal analgesia, and abducent paralysis developed in direct connection with the operation. This paralysis subsided very slowly. In all the cases the first symptoms were noticed as the patient first left his bed.

Clinical Notes

THE TREATMENT OF FRACTURES OF THE FEMUR

WITH A DOUBLE ANGULAR PLASTER-OF-PARIS SPLINT AND ITS APPLICATION BY A SECTIONAL METHOD.

J. H. DOWNEY, M.D.
GAINESVILLE, GA.

Owing to the difficulty of obtaining the results without deformity and the great suffering and long confinement of patients suffering from fractures of the femur, this condition has interested the profession from time immemorial.

The different methods, devices and apparatus devised for the treatment of these fractures are too numerous to mention, and I have not added another wholly new one to this list, but have tried to get the best points of each and to combine them into one which will meet every indication of any fracture of the femur, whether of the neck, upper, middle or lower third, and one open to the fewest rational objections. It is conceded that no straight splint can be employed successfully in fractures of the upper and lower end of the femur. If this be true, then the straight plaster cast, Buck's extension and the long-side splint of Hamilton must be laid aside or used only in fractures of the middle third. The recognition of this fact led Esmarch to use a double inclined plane, Nathan R. Smith to devise his long anterior splint and, later, Hodgen his posterior suspension. These three last methods had the important idea in view of making the long fragment conform in direction to the short one, and at the same time to get the nearest approach to a natural restful position of the leg and greatest amount of normal muscular relaxation. Each of these methods meets the indications mentioned, provided the patient can be kept still, yet none of them meets the fundamental indication for which they were devised. "The objects in the treatment are to reduce the fracture, to maintain reduction immobilized until union is firm, and to restore the leg to its normal usefulness."

Does any method given in our text-books to-day meet the above-mentioned objects in treatment? I believe nearly all will agree with me that they do not, and most of them seem to have things reversed, as, e. g., the immobilization of the patient instead of the fracture. Each splint or device I have spoken of has many merits, especially the Hodgen, and I do not speak of them in a spirit of criticism, by any means. They have each served the profession well and have aided in relieving suffering humanity. As we can never reach a state of perfection, we must always be looking for something better. Let us combine the good points of all these methods and see if we can not meet all these requirements and at the same time give the patient a reasonable degree of comfort and safety and the freedom of any desired movement during this long process of repair without increase in present pain or risk of future deformity. Esmarch, Smith, Hodgen and Cabot's apparatus give us position; Buck's apparatus, extension; plaster-of-Paris, fixation.

AUTHOR'S DEVICE.

I want to combine all these important points in one universal dressing known as the double angular plaster-of-Paris splint, which, if properly applied, will meet every indication.

To illustrate, let us assume that we have a supercondyloid fracture. We must flex the leg on the thigh, the thigh on the abdomen. then apply a plaster-of-Paris cast from the base of the toes to just above the knee in this properly flexed position (Fig.1); make the cast a little thicker just below the knee and allow the plaster to set: when sufficiently hard, which takes about ten minutes, arrange for extension and counter-extension.

If not provided with an apparatus like than shown in the illustrations, a folded sheet may be passed between the legs and brought well up against the perineum with a strong man holding each end. Have another assistant place the right hand under the knee, the left hand over the front of the lower end of the tibia. By these assistants pulling in opposite directions the necessary amount of extension can be effectually made in this position and all the aid of natural muscular relaxation possible obtained.

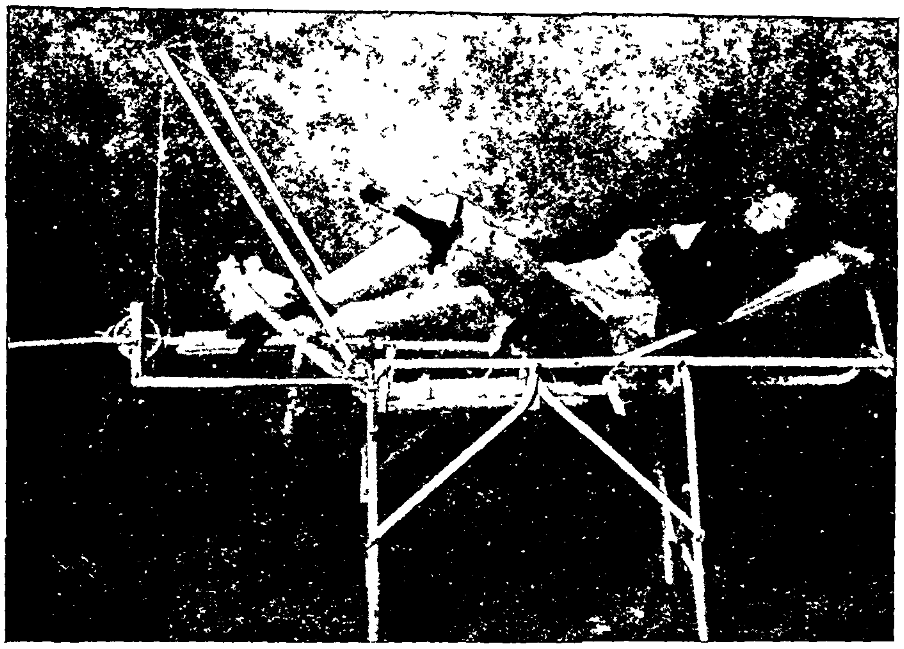


Figure 1.

The traction being steadily kept up. the fragments are brought into apposition and held firm while the upper section is applied. Pad the parts to be covered by plaster in cotton batting held by a roller bandage; take a couple of heaping tablespoonfuls of dry plaster, moisten to the consistency of thin dough. rub thoroughly around the upper end of the lower section, start with the plaster roller at this point and go up in the usual way to the ensiform cartilage, making as many layers as necessary to give the desired strength. Opposite the hip joint there is only a three-fourths circle in the cast: this makes a weak point and is one of the greatest strain. consequently reinforcement will have to be made thoroughly or it will break. This can be done by an up-and-down back-and-forth application of the plaster roller or by placing between the layers of plaster narrow strips of tin or strips of fine wire gauze. The addition of a few extra turns of roller at the welding point just above the knee completes the dressing (Fig. 2)

ADVANTAGES OF THE DRESSING.

Note carefully the position of the limb in Figure 2. There are two angles. one at the knee. the other at the hip. These angles serve a threefold purpose:

1. *Position.*—By placing the muscles in a natural state of relaxation the long and the short fragments are accommodated and brought in line with each other. They serve as points of fixation, prevent shortening and laxation which is a great comfort to the patient. It places him in a fixed sitting position, which can be assumed at will in comfort. In walking with the crutch the foot is out of the way; when in bed he can lie on the side or back by placing a folded quilt under the knee. By this splint we give the patient the freedom of every movement without fear of pain or injury.

2. *Extension.*—We could ask no better extension than that afforded by the abrupt angles at the knee and hip.

3. *Fixation.*—The plaster cast is the most perfect form of fixation, fitting the limb as accurately as an elastic stocking; it prevents movement of the fragments, muscular contraction and pain.

By this method three-fourths of the horrors of fracture of the femur are done away with by giving the patient the freedom of lying, sitting or walking at his pleasure with the assurance of a good result, and all this with a remarkably small amount of pain. Can as much be said for any other method? What objection or drawback is there to this method? There are two: One is the weight of cast sufficiently strong to be effectual; the other is the danger of swelling of the limb and the cutting off of the circulation to the distal portions. As to the first, a plaster cast on an adult six feet high and weighing 175 pounds. from base of toes to ensiform cartilage on the second day, after evaporation has taken place, weighs approximately eight and one-half pounds; an extra heavy one would weigh ten pounds. This is nothing when compared with a ten- or fifteen pound Buck's extension weight or partial body suspension by a Smith or Hodgen's splint.

The greatest drawback or danger is swelling or obstruction of the circulation. This can be obviated by laying the cast open and applying an ordinary roller bandage; with this there is no more danger than from any other splint. and yet it fits the limb perfectly, and later. when swelling subsides. a strip can be cut and the edges brought together, and there is still a perfect splint. one that will give comfort and pleasure to the patient. success and happiness to the physician.

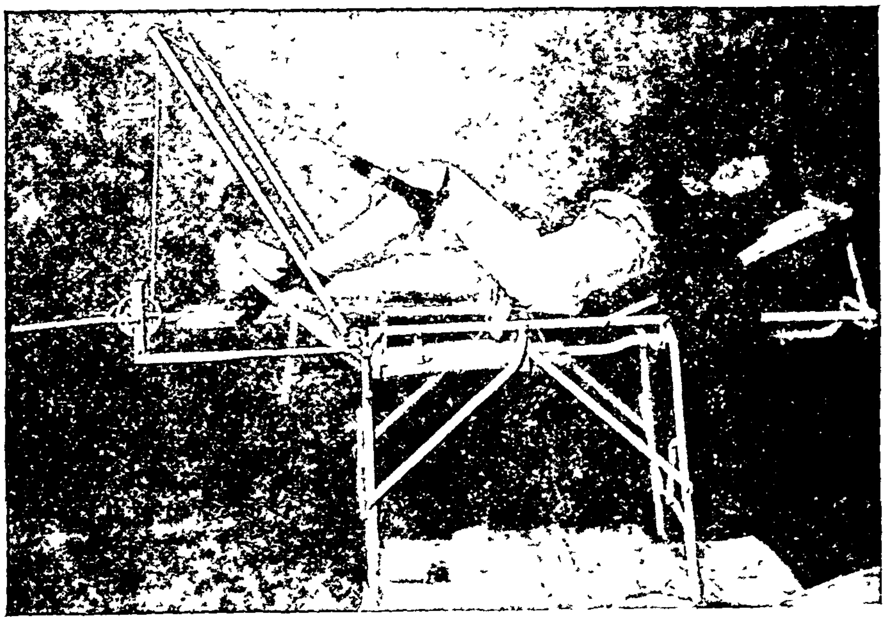


Figure 2.

A CASE OF TOTAL ATROPHY OF THE STOMACH.

G. PAUL LAROQUE, M.D.
AND
MATT O. BURKE, M.D.
RICHMOND, VA.

The following case is worthy of record. The condition is exceedingly rare and should not be confounded with hysteric affections on the one hand nor with gastric carcinoma on the other. The patient was studied by us through the courtesy of Dr. Stuart McGuire.

History.—Two years ago, a dentist, about 35 years of age, after a couple of years very hard work associated with much loss of sleep, suddenly became the victim of "nervous breakdown," and at about the same time after dietetic indiscretion, suffered acute gastritis. From the latter he rapidly recovered and was advised to take a sea voyage, which he did. The voyage was rough and he was made violently seasick for a week. After this he began to take excessive care of himself and particularly of his stomach, carefully avoiding eating a full meal and never completely gratifying his hunger for fear of an attack of indigestion. On questioning him carefully we learned that he had not had indigestion since his primary attack and that since he was seasick he had not vomited nor been nauseated.

Symptoms.—His symptoms throughout were negative save that he had emaciated in the past 18 months from his normal weight of 160 pounds to 80 pounds. He had had at no time any colic or indigestion or pain either before or after eating. He had lost correspondingly of strength and his bowels did not move as regularly as they previously did, still he was not constipated. He had been regularly hungry till the last 6 months but was always afraid to eat. For the past 6 months he was less hungry than formerly. Since the beginning of his illness he had not taken at any time a full meal and during the past 6 months had lived on fluids with an occasional piece of toast. The greatest quantity, even of milk, which he had taken, was two-thirds of an ordinary tumblerful, and now even this caused fulness in the epigastrium.

Physical Examination.—Patient was a remarkably emaciated man in whom every superficially-placed bone can be outlined. He was slightly anemic and yet his appearance was not that of cachexia. Weight, 80 pounds. His tongue was clean, red, small and moist. Exhaustive examination of every organ in his body failed to detect evidence of disease, except in the stomach. The abdomen was scaphoid in shape, so much retracted that the pulsations of the abdominal aorta were distinctly visible. There was no rigidity nor tenderness anywhere and the anterior portion of the spinal column was easily palpable through the abdomen. The pylorus could not be felt. Urine and feces were perfectly normal.

A test meal of bread and water was administered and could not be recovered at the end of an hour. The effort to wash his stomach was so exhausting to him that this was not attempted again till he could be strengthened by stimulating nutritive enemata. At the end of about a week after a test meal, the gastric contents showed an entire absence of HCl and yet no lactic acid was found. His gastric capacity was greatly diminished (stomach held only 8 fluid ounces).

Diagnosis.—Voluntary starvation. Secondary atrophy of the stomach.

Treatment.—He was placed under nourishing treatment. His dietary was carefully arranged so as to avoid at any time giving him sufficient quantity to cause the slightest discomfort, lest he should again become afraid to eat. He was, therefore, fed small quantities often, gradually increasing the quantity and increasing the intervals between feedings, in a manner very similar to that employed in training an infant stomach to solid food

Under this treatment the patient gained 5 pounds weekly for 5 weeks. By this time he was on regular house diet but since he could not take a full meal at once, he was given eggs and milk between meals. About this time he failed to gain more than about a pound a week. A week or so later his gastric contents still failed to show HCl.

Operation.—The man being about 35 years old, it was decided to make an exploratory incision in the hope that carcinoma of the stomach could be discovered in time for radical cure. Operation revealed an atrophied stomach about the size of an ordinary tumbler with no sign of infiltration nor any evidence of structural change.

A CASE OF TETANUS NEONATORUM WITH RECOVERY.

E. L. DEWEY, M.D. AND W. E. PUTNAM, M.D.
WHITING, IND.

History.—Infant. F., aged 10 days. Mother and child attended by a midwife until the ninth day, when the pre illness began. The mother noticed that the baby was cross irritable and was unable to nurse, and the jaw was set.

Examination.—Temperature, 101.5. Trismus, rigidity an traction of the neck were marked. The navel was red swollen, and several drops of pus were pressed out.

Treatment.—The infected area was opened with a knife cauterized with 95 per cent. carbolic acid. Ten cubic c meters of antitetanic serum were administered over the se nerve at the gluteal fold. Two grains of chloral hydrate four grains of potassium bromid were given by rectum e four hours. Camphorated tincture of opium was given in drop doses as often as necessary to keep the baby sleeping. child was nourished with mother's milk given with a med dropper, the jaws being separated with the finger for the pur

Course of the Disease.—July 18: At 8 a. m. the tempera was 100.4; at 2 p. m. it was the same. Ten cubic centim of antitetanic serum were administered over the sciatic at the gluteal fold. The opium, chloral and bromid were tinued. The rigidity extended to the muscles of the back lower extremities: their were opisthotonos and cynosis i baby was disturbed.

July 19: At 8 a. m. the temperature was 102.4; at 2 it was 103.6. Antitetanic serum was again administered i same situation. At 8 p. m. the temperature was 101.3. bromid and opium were continued. The opisthotonos and osis remained about the same.

July 20: At 8 a. m. the temperature was 103.2. Ten centimeters of antitetanic serum were injected into spinal between the fourth and fifth lumbar vertebræ. At 7:30 p. temperature was 100.6. The same amount of antitetanic was injected into the spinal cord at the lumbrosacral joint minims of a 5 per cent. solution of carbolic acid were hypodermatically every three hours and increased 5 mini each dose till 20 minims were being given at each dose. chloral, bromid and opium were continued. The trismu less marked; the opisthotonos and cyanosis were still pr The child was able to take nourishment from the nursing

July 27: Chloral and bromid were discontinued an centimeters of antitetanic serum were injected into the cord between the third and fourth lumbar vertebræ. At 8 the temperature was 98.6. There was some trismus and ri of the back and lower extremities when the baby was dist

July 22: At 8 a. m. the temperature was 98.6; at 7 p. was 101.2. Ten cubic centimeters of antitetanic serum injected into the spinal cord between the fourth and fifth vertebræ. The chloral, bromid, opium and carbolic acid continued.

July 23: At 11 a. m. the temperature was 98.6: at 8 it was 99.2. The hypodermic injections of carbolic acid discontinued.

July 24: At 8 a. m. the temperature was 98; at 8 p. was 98.6. There was still some rigidity of the back and extremities when the baby was disturbed.

July 25: At 8 a. m. the temperature was 98.6; at 8 it was 98.8. The chloral and bromid were ordered given times a day.

July 26: At 8 a. m. the temperature was 98.4. The was able to nurse from mother for the first time since t ness began. There was a diffused erythema all over the There was no rigidity of the back and lower extremities.

July 26: Chloral and bromid were discontinued an child was discharged cured on July 29.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION
103 Dearborn Avenue . . . . Chicago, Ill.
Cable Address . . . "Medic, Chicago"
Subscription price........Five dollars per annum in advance
[For other information see second page following reading matter.]
SATURDAY, AUGUST 25, 1906.

The space given to statistics of colleges and state boards in this issue, our annual Educational Number, requires the omission of some departments and the abbreviation of others.

As will be noticed, we have combined in this number the statistics relating to the examinations for license to practice medicine conducted by the various state licensing and examining boards during 1905, with the medical college statistics covering the year ending June 30, 1906. While there are advantages in combining all this matter in one issue of THE JOURNAL, we find it not altogether satisfactory. In the first place, the statistics regarding the state board examinations might have been published at least three months earlier. Again the work connected with tabulating this matter, making deductions, etc., is very great, and this makes the labor burdensome when it all comes at the same time. We shall probably hereafter, therefore, publish the statistics in two different numbers, as we have done in the past.

COUNTRY PRACTICE.

Suggestions as to available locations for physicians can scarcely be out of place at any time, but we are inclined to believe that, owing to hospital appointments. postgraduate vacations and discouragement after ineffectual attempts to secure a foothold in crowded centers, during the "healthiest" season of the year, a very large proportion of the members of spring graduating classes are seeking locations late in the summer and early in the fall.

In England, there is an ethical and economic rule, not, of course, strictly enforced, that the young physician shall seek an actual vacancy, left by the death or retirement of a practitioner. In this country, no such principle is recognized and competition. provided that it is fair and honorable, is allowable. With considerable justice. the young graduate is often advised to select the most desirable location that he can possibly command, even at some risk of failure, to make his charges equal to those of the most firmly established practitioners of the neighborhood, to hang out his sign in the same row with the most successful older men and, in general, to aim high.

With all deference to the idea that every barefoot boy may be president and that neither heredity nor early mental mediocrity is a bar to success, there is much wisdom in having the young man in any profession, indeed, before selecting his life work, make a careful, impersonal, judicial canvass of his probable capabilities, and such a course would undoubtedly result in less aggregate waste of effort, less humiliating disappointment and greater total achievement than the policy of following the dreams of ambition. "Aim high" is a specious motto. "Aim to hit the mark," with regard to the carrying power of the weapon and ammunition possessed, is a much better one.

It is obvious that one who has a reasonable ambition for medical teaching, hospital work and specialization should remain in a city, though not necessarily the one in which his medical studies have been pursued, nor should longitude be too slavishly considered. For the man whose tastes and aptitude mark him for the general practice of medicine, the country or small town should receive fair consideration and the prejudice in favor of the city should be taken only at its true value.

A practical, initial reason for preferring the country—and we shall include in this term the village or small town in which most so-called country doctors actually reside—is that the English rule of seeking a real vacancy can be followed more literally than in the city. Any possible fluctuation in the medical population of a large city fails to create a genuine need of another practitioner or to render it impossible for one or more to secure a foothold without displacing some one else. In a village with its tributary country, it is, on the other hand, easy to determine whether a vacancy exists or not. The fact should not be overlooked that to attempt to establish oneself in such a community by driving out a veteran physician may and should fail.

It may be stated as a fact, that, in this country, less than 600 inhabitants support one physician. Unfortunately, this support is far from ideal and the ratio should be very much larger. Obviously, the general wealth of a community, its dependence on medical charity, and the prevalence of disease, accident, and the birth rate, must be considered, as well as the arithmetical ratio. It is also a matter of general observation that a new—not necessarily a young or even a recently graduated physician—in a city, requires about three years to build up his practice to a point at which he can be self-supporting, unless he has unusual influence or unless the circumstances are otherwise unusual. In the country, a practice may reasonably be expected to be adequate for self-support within a year and the same statement applies to certain isolated—but not often desirable—sections of cities. Salaried positions, on a fair living basis and in ethical lines of medical work, afford support for about 2 per cent. of the medical profession, but the more desirable, as in the government medical service, state institutions, private sanitariums and municipal boards of health, are not available for the average man or for immediate selection after graduation.

The urban population of the United States—meaning residents in towns and cities of 8,000 and over was 20.9 per cent. in 1870, 22.6 per cent. in 1880, 29.2 per cent. in 1890 and 33.1 per cent. in 1900. It is obvious that a town of 8,000 inhabitants is not a city in the ordinary social and sanitary sense and that physicians residing in such towns must have a considerable amount of country practice. These statistics show that there has been, in the last ten years, a decided slowing of the tide from country to city, especially if we consider that the natural, local increase of population in cities is a large factor in the total increase for the nation and that the same growth would bring a great many villages past the 8,000 limit. At any rate, from purely statistical reasons, it is obvious that two-thirds of the recent graduates should seek locations in the country, and probably this fraction would be increased to four-fifths if we include as cities, only such centers of population as have 15,000 or more inhabitants.

As a matter of fact, an approximate study of statistics shows that the normal distribution of physicians is not maintained. For example, the cities of New York state, of 100,000 or more inhabitants, containing about 52 per cent. of the population, have about 70 per cent. of the physicians. While the support of many specialists and physicians of note, living in cities, receives a substantial contribution from the country, this applies to relatively few in the aggregate and seldom amounts to more than a quarter of the total income of an individual physician. Moreover, large cities contain, to a disproportionate degree, persons who can not help in the support of our profession.

Passing from the statistic to the general impressionistic argument, we find that the young physician supported outside his practice is a type almost solely limited to cities and that while the gross income of a fairly mature and successful physician in a small village or town usually averages from $2,500 to $5,000, probably not more than 20 per cent., if as many, of city physicians, pass the lower figure. A strictly country practice, however, rarely exceeds $3,500, the fees and distances covered in visiting patients rendering it almost impossible to do a larger "business." On the other hand, it should be remembered that the scale of living and the actual prices of rent or its equivalent, maintenance of equipage, provisions, etc., are much lower in the country than in the city. Thus, as compared with his clientele or with his professional colleagues, the country practitioner with a gross income of $1,500, is as well off as the city practitioner with a gross income of $2,500.

It may not be out of place, also, to point out that the country or small village by no means corresponds at present to the description of rural simplicity of the fifth reader and that the twentieth century country doctor in most parts of the United States, is much less of a hero and more fortunate in his material and social life than Ian MacLaren and various other writers of fiction would give us to believe.

The city dweller is too apt to imagine that what have been called city conveniences are out of the question in the country. Water supplies, gas and electricity are becoming common in villages of even 1,500 inhabitants and less. Even where coöperation has not already secured these conveniences, the improved wind mill or gasoline engine and acetylene or naphtha gas plants, place them within the reach of any fairly well-to-do country resident at an initial cost which is not excessive, when the cheapness of maintenance is considered. The telephone is also, now, relatively as common in the country as in the city and is much less expensive. Rural free delivery of mail and local deliveries of merchandise are also in common use.

It is true that educational and social advantages are easier of access in the city, yet good high schools, in the more enlightened states, are found in practically every village, local libraries are common and many public libraries in cities have arranged for suburban service. In many parts of the country, the train or trolley service to and from large cities places the resident of a village thirty miles away within easy and rapid access of the business center.

Of course the ambitions of the country doctor are somewhat limited in regard to certain forms of professional activity. At the same time, these limitations are by no means so serious nor so absolute as might appear. The tendency is for medical teaching to become more and more a specialty by itself, conducted for the most part by men who do not engage in practice. Conversely, the physician, as such, is tending to return to the status of a private practitioner and to make his reputation accordingly. Small hospitals have arisen in the small towns and a great deal of good surgery is now done in communities tributary to large cities which was formerly done by the city surgeon.

It must be admitted that the rural districts described in the pioneer tales and in the fifth reader still exist and that the simple life there found is not particularly attractive to the average twentieth century American. On the other hand, forces are at work with an ever increasing momentum to check the excessive development of urban life at the expense of rural life and to render the country and small village more and more desirable, not only for our own profession, but for the better class of the population generally. The man who somewhat anticipates the turn of the tide of population may well feel that he is making a wise investment for the future.

THE NECESSITY FOR BETTER PROVISION FOR LEGAL MEDICINE IN THIS COUNTRY.

Medical jurisprudence or legal medicine, considered as a distinct discipline, is fast becoming a neglected subject in the American medical curriculum. It is true that many state boards specify a certain amount of instruction in something that is loosely called medical jurisprudence, but it does not appear that the exact field of knowledge that this subject should cover has been accurately defined and, judging from the lists of questions published from time to time by state boards, little or no attention is paid to the subject in the various state examinations for license.

It is also true that many of our medical schools offer brief courses of instruction in medical jurisprudence, but such a thing as a definitely organized department of medical jurisprudence with the necessary laboratory and other special facilities does not appear to exist in any of our medical schools. The actual state of affairs in this respect may be learned from the following summary of the work actually given in some of our well-known medical schools:

1. Harvard Medical School has a voluntary course of six lectures by a local judge. The course is not taught as a separate study, instruction being given by the various departments in the medicolegal aspects of the various subjects.
2. Johns Hopkins University. Instruction is given in the third and fourth years, definite number of hours not given, excepting one hour a week; probably between twenty to thirty hours given.
3. University of Michigan. Thirty hours of lectures given to the joint senior classes in law and medicine.
4. Northwestern University Medical School gives eight lectures and sixteen recitations in senior year.
5. Yale Medical School, during the senior year, gives one hour a week for two terms, total about twenty hours, which is devoted entirely to lecture work.
6. University of California, during the third year, gives about twenty hours of lecture work.
7. University of Minnesota, during the last half of the senior year, devotes between sixteen to twenty hours to lectures and recitations.
8. Washington University, St. Louis. During the second part of the senior year, between twenty-five and thirty hours are given to lectures by different men, including two lectures at special postmortem.
9. University of Pennsylvania, during the first part of the fourth year, devotes about sixteen hours to the subject.
10. McGill University, Montreal, devotes twenty hours during junior year to lectures and practical work. The practical work takes up blood stains both with the microscope and spectroscope.

The New York schools, Columbia, Bellevue, and Cornell, make no mention of the subject whatever. Medical jurisprudence is not among the courses required by the New York Board of Regents.

In our large cities the appointment of untrained men, which so far has been the rule, to such places as coroner's physician, as well as the frequent changes for purely political reasons of such appointees, coupled with loose administration and total failure to provide permanent and proper facilities for even only the routine work, have long since accustomed us to put up with much that is crude and discreditable in this important branch of public service. At the same time as this is true in general, it should not be forgotten that we have many men who, by devoting themselves to special lines, largely in the capacity of private experts, have become recognized authorities in their chosen fields of legal medicine. In the smaller towns and the rural communities, in which the opportunities for medicolegal work necessarily are limited, the appreciation of some of the most fundamental medicolegal principles must often be slight if one may judge, for instance, from the number of improperly conducted and incomplete postmortem examinations in suspected criminal cases. The fundamental rule that in order to establish definitely the real cause of death (whenever that is possible) it is essential to examine all the body is frequently neglected and sometimes this neglect results in the miscarriage of justice.

In other countries legal medicine appears to receive a far greater degree of attention than in ours. As examples may be cited Germany and Austria, with their professorships of legal medicine, their special medicolegal institutes equipped with the necessary laboratories and apparatus for pathologic and chemical work; here also a certain amount of definite knowledge of the subject on the part of the applicants is necessary for license to practice medicine. In France and Italy this subject receives also special attention, and the late Professor Brouardel, of Paris, was one of the great authorities in this field. In Europe special journals have existed for years devoted to the publication of scientific investigations, practical observations and discussions of medicolegal problems. When one considers the relative paucity of original contributions to medicolegal subjects here, the impression results that conditions in this country so far surely have not been so favorable as one would wish for the growth of interest in and appreciation of the practical and scientific importance of this special branch of medicine.

The remedy? Improvement in the existing conditions which are unsatisfactory from the point of view of the public and discreditable to the medical profession, must be sought in at least two different directions. In the first place, provision should be made for the appointment in our larger cities, where the normal amount of criminal and other medicolegal work clearly warrants it, of medicolegal experts, especially in pathologic and chemical lines. These appointments should be permanent and they should be made according to merit, and not, as at present, for political reasons, when made at all. The salaries should be large enough to attract good men to the positions. When we consider the character of the work and the special qualifications necessary to do it well, the hardships of such positions should command at least about the same grade of salaries as are paid to those professors in our better university medical schools who devote themselves wholly to the teaching of and investigation in the fundamental branches. Then there should be provided assistants and adequate facilities for the work in the form of suitable postmortem rooms, with laboratories and apparatus for microscopic, bacteriologic and chemical purposes and with space for the establishment of museums in which valuable specimens of various kinds could be placed for use in instruction and study. In many of our cities an arrangement of this general character would be economical, because the large special expert fees now paid in so many notorious murder cases would be rendered largely unnecessary, to say nothing of the greater promptness and thoroughness of the examinations.

On account of the relatively small population of our ordinary counties (exclusive, of course, of those containing large cities), it can not be expected that each county ever will maintain a permanent, competent medicolegal expert. On the other hand, the state might well establish a state medicolegal office or institute for the purpose of furnishing (outside of the larger cities) prompt and skilled medicolegal service in criminal and other cases demanding such service.

In the second place the instruction in legal medicine in the medical schools should be improved and extended. By this it is not meant that a full, new department, with separate staff and equipment, must be established in every medical school in the country. This would be possible, to a greater or less degree, in the case of only a small number of university schools that could enter into mutually advantageous relations with the city in which they are located (or possibly with the state). Thus, the professor of legal medicine in Harvard University, for instance, might very well be the chief medicolegal officer of Boston—indeed, we believe some arrangement like that now exists—the institute and equipment being furnished in accord with arrangement between the city and the university. Naturally, the students in schools so favorably situated as this would be in this case would enjoy special advantages, and in time these advantages would be sought by those who desired to become specially trained in medicolegal work. In other words, schools of this kind would become special centers for the training of men in what we are calling legal medicine. And such centers may be needed more and more in the future as the opportunities for careers in legal medicine increase and enlarge.

In the medical schools in general in which legal medicine can be taught only in outline or in which instruction is supposed to be given by the various departments in the medicolegal aspects of their various subjects, it would seem to be desirable that the faculties make special efforts to strengthen the work, and especially in the direction of better co-ordination between the various departments. Thus, it is particularly necessary that students be instructed more carefully in the matter of postmortem examination in medicolegal cases. Experience in criminal cases, especially in cases of abortion and poisoning, shows that practitioners often have no adequate conception of the thoroughness and objectiveness required.

If it were possible to promote development in the directions outlined, there would soon be established in this country higher standards for medicolegal work, at least in the lines touched on here, and the law in general would receive more direct and greater benefit now of existing technical knowledge in medicine.

EXAMINATION FOR A HIGHER MEDICAL CERTIFICATE IN FRANCE.

An interesting and important decree has recently been promulgated by the Minister of Public Instruction of France, which appears in the *Semaine Médicale*, August 1, under the heading, *"Décret instituant un certificat d'études médicales supérieures,"* and which is commented on at some length in the same issue by Prof. Ch. Bouchard.

The degree outlines in detail a new plan of examination for those who desire to secure a certificate of superior attainment which will make them eligible to positions in any of the medical faculties of France, or which may serve as evidence of especial qualifications wherever they may wish to pursue research or engage in teaching. The statute of 1874 required that a candidate for a teaching position must hold himself in readiness to pass an examination at any time in any or all of the branches of medicine. The obligation thus imposed on the young physician to keep fresh in memory an enormous mass of facts entailed such an expenditure of time and energy that it operated as a serious bar to original investigation. To this Professor Bouchard attributes the fact that France was relatively sterile in research and original contributions to knowledge until 1887, when the law was modified by eliminating the examinations in anatomy and physiology, and by permitting the candidate in immediate preparation for the oral test in pathologic anatomy to have access to books in the national library. He was also required to submit a thesis embodying the results of his own researches. Unhappily, however, this resulted in neglect of the young physicians to keep up their interest and their knowledge in the medical branches, other than those in which they were engaged in research, and the result, while greatly stimulating investigation in special lines, the fruits of which have been abundant and gratifying, was the production of a body of younger men not possessing that broad general information which is indispensable to the successful teacher.

The recent degree may be regarded as a compromise between the statute of 1874 and the amendment of 1887. It provides for examinations, to be held semi-annually, by properly constituted juries, in twenty different groups of subjects, and the examination is to consist of: 1. A composition on anatomy, physiology and histology, lasting four hours, the question discussed to be one of three drawn by lot from those provided by the jury. This examination is to be held in a closed room, without access by the candidate to any aids whatsoever. 2. An oral examination on one of three question in general pathology, similarly drawn, to continue not more than three-quarters of an hour after three hours for preparation by the candidate in a closed room without aid; and, 3. A practical demonstration in pathologic anatomy, comprising the various methods of exploration of the tissues and organs.

Similar examinations are provided for candidates who seek positions in the schools of pharmacy. The first examination is to be held in October, 1907, and, after January, 1908, they are to be held semi-annually. Each jury is to be composed of nine members, selected by the Minister of Public Instruction from the faculties of France, not more than four members of any one school, however, to be drawn on any jury. The candidate may submit to one, two or all three of the tests at any one examination as he may elect. Having satisfactorily passed these examinations, he is to receive the *"certificat d'études médicales supérieures,"* and he will not thereafter be required to take any further examination, but becomes at once eligible for appointment in any faculty of his choice, when there may be a vacancy, as chief of clinic, laboratory assistant or substitute professor.

It is apparent that the new plan has been considered with great care by the council for higher education of France, and is expected to result in a decided improvement in the quality of the accessions to the medical faculties, while, at the same time, it will preserve to the younger physicians that leisure, freedom and tranquillity of spirit which are essential to original investigation.

AN INCREASE IN MEDICAL COLLEGES.

One discouraging thing in the statistics published this week is the fact that, while small, there has been an increase rather than a decrease in the number of medical schools. On the other hand there is, here and there, an indication of a desire for betterment by combining institutions. During the year the Central Medical College of St. Joseph, Mo., and the Ensworth Medical College of St. Joseph, Mo., merged into the Ensworth-Central Medical College of St. Joseph, Mo. The Medico-Chirurgical College of Kansas City, Mo., the Kansas City Medical College of Kansas City, Mo., and the College of Physicians and Surgeons of Kansas City, Kan., united to form the Medical Department of the University of Kansas. The most noteworthy merger, however, was that through which the Fort Wayne College of Medicine, the Medical College of Indiana and the Central College of Physicians and Surgeons of Indianapolis became the Indiana Medical College, the school of medicine of Purdue University, the latter a semi-state institution. Each of these three schools had become a well-established and recognized institution, and considerable self-sacrificing spirit was shown on the part of the members of each of the faculties in giving up their respective institutions for the sake of having one good school in the state. It is to be regretted, therefore, that another school is being started in Indianapolis, so that, in spite of the merger, there are still to be two schools in that city. We make this comment as a general proposition without entering into the merits of the case. It is, however, such instances as this that discourage those who are desirous of eliminating weak schools by combining two or more into one strong one. In several locations where two, three or more colleges are struggling along with difficulty, not able to do good, efficient work through lack of equipment, futile efforts have been or are being made to unite them into one institution. Doubtless in time personal ambition on the part of the few will give way to the best interests of the many and minor difficulties be overcome and one strong college take the place of two or more weak ones. Standing, as our country does, as one of the leading nations in commerce, in the arts, in the sciences and in general education and enlightenment, it is certainly to be deplored that she remains a laggard in standards of medical education.

COLORADO'S NEW REQUIREMENT.

The Colorado Board of Medical Examiners has adopted new requirements regulating medical licensure which are certainly to be commended and which place that state far in advance of its former position. Up to the adoption of this new schedule, Colorado was among the states which did not require an examination of all applicants and which registered non-graduates. Graduates of the Colorado schools will hereafter be required to take the examinations the same as graduates of schools outside the state. Provision has been made for old practitioners by special sections, exempting them from the more exacting requirements that apply to recent graduates. The new schedule also contains a provision whereby commissioned medical officers of the United States Army, United States Navy and of the United States Public Health and Marine-Hospital Service may be registered without examination. This offers one class of credentials which it seems to us might be accepted in other states.

CALIFORNIA STATE SOCIETY JOURNAL OUT OF THE ASHES.

The California State Journal of Medicine, Phoenix-like, has risen from the ashes of the earthquake and fire. The June number appears in the old form and size, and Editor Jones is giving evidence that he is in business at the old stand. In the number before us, however, there are items that indicate that things are not as they were. "Please do not ask for back numbers of the *Journal,* for there are none," we read. "Please don't ask for copies of the constitution and by-laws, or for back numbers of the Register of Physicians, or for programs, for there are none." The state society seems to have been in unusual ill luck, for, while practically everything was wiped out by the earthquake and fire, another visitation was made on the night of July 21, when a new edition of the register, i. e., the state directory of physicians, was destroyed by fire at Mountain View, where the printing and binding were being done. We extend our sympathy to the state society officers, but congratulate them on the energy they are displaying. The offices of the society are now located at 2210 Jackson street, San Francisco.

MEDICAL EDUCATION IN THE UNITED STATES.

In this number appear statistics regarding medical education in the United States for the year ending June 30, 1906. The information was obtained direct from the colleges, from the annual announcements and from other sources, special care being taken to insure correctness in every instance. We desire to express our appreciation of the assistance rendered by the officers of the medical colleges.

While there is much to regret regarding medical education in the United States, there is much to encourage the belief and hope that improvement is being made. Many of the colleges are, of their own volition, raising their standards, either by increased entrance requirements, by longer sessions, by offering better courses or by all of these. Many of the state licensing boards are also demanding higher entrance and graduating requirements, and are continually urging and adopting changes for the better. The various college associations are wielding a good influence. The establishing of a Council on Medical Education is having a decided effect. State medical societies are establishing permanent committees on medical education, some of which have already done energetic work. The outlook, we repeat, is encouraging.

Number of Medical Students.—The total number of medical students (matriculants) in the United States for the year ending June 30, 1906, was 25,204, a decrease of 943 below last year. Of this number, 23,116 were in attendance at the regular schools, 1,085 at the homeopathic, 644 at the eclectic, 110 at the physio-medical and 249 at the nondescript (unclassifiable) schools. The attendance at the regular schools shows a decrease of 1,003 below that of last year, a decrease of 546 below 1904 and a decrease of 1,814 below 1903. The number this year is the smallest since 1900. In the homeopathic school there was a decrease of 19 below the attendance of 1905, a decrease of 224 below 1904, there being a constant decrease since 1900, and the attendance for each of the past two years has been below that of 1880. The eclectic schools show a slight increase over last year, although the figures of each of the last two years are smaller than previous years since 1900. The physio-medical colleges had 110 this year, against 114 last year and 129 in 1904.

Table 4.—Medical College Attendance.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med. and Nondescript.	Total.
1880......	9,776	1,220	830	...	11,826
1890......	13,521	1,164	719	...	15,404
1900......	22,710	1,909	552	...	25,171
1901......	23,846	1,683	664	224	26,417
1902......	24,878	1,617	765	241	27,501
1903......	24,930	1,498	848	339	27,615
1904......	23,662	1,309	1,014	357	28,142
1905......	24,119	1,104	578	346	26,147
1906......	23,116	1,085	644	359	25,204

Graduates.—The total number of graduates for the year ending June 30, 1906, was 5,364, a decrease of 242 below 1905, 383 below 1904 and 334 below 1903. The number of graduates this year is the lowest since 1902, when it was 4,999. For the year just closed the percentage of graduates to matriculants was 21.3, or practically the same as for 1905. The percentage was 30.3 in 1904 and 22.8 in 1903. The number graduated from the regular schools was 4,841, or 285 less than in 1905 and the smallest number since 1902. From the homeopathic colleges 286 were graduates, showing an increase of 10 over last year. The eclectic colleges graduated 186, an increase of 33 over last year.

Table 5.—Medical College Graduates.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med. and Nondescript.	Total.
1880......	9.776	380	188	...	3,241
1890......	3,853	380	221	...	4,454
1900......	4,715	413	86	...	5,214
1901......	4,879	387	148	...	5,444
1902......	4,498	336	138	27	4,999
1903......	5,088	420	149	41	5,698
1904......	5,190	371	146	40	5,747
1905......	5,126	276	153	51	5,606
1906......	4,841	286	186	51	5,364

Women in Medicine.—During the past year there were 840 women studying medicine, or 3.3 per cent of all medical students, as against 4.1 per cent last year. There were 233 graduates this year, or 4.5 per cent. of all graduates. In 1905 there were 1,073 students and 219 graduates, while in 1904 there were 1,129 students and 244 graduates. Of all women matriculants, 189 (22.5 per cent.) were in attendance at the three medical colleges for women, as compared with 221 (20.6 per cent.) in 1905. From these schools there were 33 (14.2 per cent.) graduated, as compared with 54 (24.5 per cent.) in 1905. The others matriculated in and graduated from co-educational colleges.

Number of Colleges.—During the past year eight colleges ceased to exist, seven (which are mentioned in another column) united with other colleges, and one, the Harvey Medical College, an evening school of Chicago, became extinct. Nine new schools have been organized. All these were regular colleges. The number of homeopathic, eclectic and physio-medical colleges remains the same. The total is 161, as against 160 last year. Of this number, 130 are regular, 18 homeopathic, 9 eclectic, 3 physio-medical and 1—the National Medical University of Chicago—is unclassifiable. Seven of the regular colleges listed do not grant degrees, teaching only the first and second years of the medical course. Sixty-one regular colleges are members of the Association of American Medical Colleges; 14 belong to the Southern Medical College Association; all the homeopathic colleges are recognized as in good standing by the college committee of the American Institute of Homeopathy, and all the eclectic colleges are members of the National Confederation of Eclectic Medical Colleges.

TABLE G.—COMPARISON OF RESULTS IN HOME STATES AND ELSEWHERE. BASED ON TABLE C.

College.	Total Examined.	Results in Home State.			Results in Other States.		
		P.	F.	%F.	P.	F.	%F.
ALABAMA………………+ *23.4*	*49*	*41*	*2*	*4.9*	*4*	*2*	*33.3*
Birmingham Medical College….	8	7	0	0	1	0	0
Medical College of Alabama…..	41	34	2	5.3	3	2	40.0
ARKANSAS……	*1*	..	..	..	*1*	*0*	*0*
University of Arkansas………	1	..	..	..	1	0	0
CALIFORNIA……………—*25.6*	*168*	82	42	*34.6*	*40*	*4*	*9.0*
Cooper Medical College ………	48	30	7	18.9	11	0	0
University of California……..	23	17	2	10.5	4	0	0
California Medical College ……	12	2	3	60.0	4	3	42.8
Hahnemann Medical College….	15	10	4	28.6	1	0	0
Coll. of P. and S., San Fran…	39	10	13	56.5	15	1	6 2
Oakland Coll. of M. and S….	..	..	..	..	..	..	..
University of South. California	29	11	13	54.2	5	0	0
C. of P. and S. Los Angeles….	2	2	0	0	..	..	..
COLORADO……………+ *4.9*	*69*	*37*	*2*	*5.1*	*27*	*3*	*10.0*
Denver and Gross ……………	48	28	2	6.7	15	3	16.7
Denver Homeo. Med. College….	6	4	0	0	2	0	0
University of Colorado………	15	5	0	0	10	0	0
CONNECTICUT………… —	*29*	*20*	*0*	*0*	*9*	*0*	*0*
Yale Medical College …………	29	20	0	0	9	0	0
DISTRICT OF COLUMBIA ….. — *5.8*	*130*	*52*	*16*	*23.5*	*51*	*11*	*17.7*
George Washington University..	66	36	9	20.0	19	2	9.5
Georgetown University ………	30	9	3	25.0	13	5	27.8
Howard University …………	34	7	4	36.4	19	4	17.4
GEORGIA*……………… —	*18*	..	..	..	*12*	*6*	*33.3*
College of P. and S., Atlanta…	12	..	..	..	9	3	25.0
Georgia Eclectic Medical College	3	..	..	..	0	3	100.0
University of Georgia…………	3	..	..	..	3	0	0
ILLINOIS………………+ *12.8*	*1,011*	*553*	*16*	*2.8*	*373*	*69*	*15.6*
American Medical Miss. College.	20	3	0	0	14	3	17.6
Bennett Medical College ……..	30	24	0	0	3	3	50.0
Chicago Homeo. Med. Coll……	10	..	..	..	6	4	40.0
College of Med. and Surgery….	13	6	4	40.0	1	2	66.7
College of P. and S., Chicago..	278	162	0	0	99	17	14.6
Hahnemann Med. Coll., Chicago.	65	42	0	0	15	8	34.8
Harvey Medical College………	18	15	1	6.2	1	1	50.0
Hering Medical College ………	21	12	1	7.7	7	1	12.5
Illinois Medical College ………	53	20	2	9.1	21	10	32.2
Jenner Medical College………	22	13	5	27.8	3	1	25.0
Northwestern University …….	175	92	0	0	80	3	3.6
Rush Medical College…………	205	85	0	0	110	10	8.3
National Medical University …	22	15	0	0	6	1	14.3
American Coll. of M. and S……	50	36	3	7.7	7	4	36.3
Dearborn Medical College…….	29	28	0	0	0	1	100.0
INDIANA………………+ *11.9*	*156*	*116*	*27*	*18.9*	*9*	*4*	*30.8*
Cent. College of P. and S……..	27	21	4	16.0	1	1	50.0
Medical College of Ind………..	98	76	15	16.5	5	2	28.6
Physio Med. of Ind………….	7	4	3	42.8	..	..	..
Eclectic Medical College of Ind..	6	3	1	25.0	1	1	50.0
Ft. Wayne Coll. of Med………	14	9	4	30.8	1	0	0
Indiana University ………….	4	3	0	0	1	0	0
IOWA……………………+ *29.7*	*175*	*139*	*7*	*4.8*	*19*	*10*	*34.5*
Drake University ……………	14	13	0	0	0	1	100.0
Keokuk Med. Coll. of P. and S..	70	45	6	10.9	10	9	47.4
Sioux City Coll. of Medicine….	15	13	0	0	2	2	0
University of Iowa (H)………	1	..	..	..	1	0	0
University of Iowa (R)………	75	68	1	1.4	6	0	0
KANSAS……………………+ *12.5*	*25*	*17*	*0*	*0*	*7*	*1*	*12.5*
Coll. of P. and S., Kansas City..	4	2	0	0	2	0	0
Kansas Medical College ………	21	15	0	0	5	1	16.7
University of Kansas …………	..	..	..	..	..	..	..
KENTUCKY†……………… —	*175*	*5*	*0*	*0*	*94*	*76*	*44.7*
Hospital Coll. of Medicine……	40	3	0	0	18	19	54.3
Kentucky School of Medicine…	35	1	0	0	21	13	38 2
Louisville Medical College …..	26	..	..	..	14	12	46.1
Louisville National Medical Coll.	1	..	..	..	1	0	0
Southern Homeo. Med. Coll….	3	..	..	..	1	2	66.7
University of Louisville …….	35	1	0	0	21	13	38.2
Kentucky University …………	35	..	..	..	18	17	48.6
LOUISIANA……………+ *23.5*	*100*	*48*	*4*	*7.7*	*33*	*15*	*31.2*
Flint Medical College …………	12	1	4	80.0	1	6	85.7
Tulane University …………	88	47	0	0	32	9	21.9
MAINE……………… —	*20*	*18*	*0*	*0*	*2*	*0*	*0*
Medical School of Maine …….	20	18	0	0	2	0	0
MARYLAND……………— *2.3*	*576*	*105*	*62*	*31.1*	*291*	*118*	28.8
Baltimore Medical College……	120	12	7	31.6	73	28	27.7
Baltimore University ………..	52	1	4	80.0	15	32	68.1
College of P. and S., Baltimore.	92	13	2	13.3	63	14	18.2
Johns Hopkins ………………	61	13	0	0	48	0	0
So. Homeopathic Med Coll….	14	8	0	0	5	1	16.7
University of Maryland………	116	40	16	28.6	45	15	25.0
Woman's Medical College …….	6	2	0	0	4	0	0
Maryland Medical College …..	115	16	33	67.3	38	28	42.4
MASSACHUSETTS…………+ *0.7*	*222*	*127*	*13*	*9.3*	*74*	*8*	*9.7*
Boston University …………	17	5	2	28.6	10	0	0
College of P. and S., Boston….	31	4	7	63.6	14	6	30.0
Harvard University …………	101	63	0	0	38	0	0
Tufts Medical College……….	73	55	4	6.8	12	2	14.3
MICHIGAN……………— *2.8*	*149*	*61*	*5*	*7.6*	*79*	*4*	*4.8*
Detroit College of Medicine….	21	6	1	14.3	12	2	14.3
Detroit Homeo. Med. College….	..	..	..	..	..	..	..
Michigan Coll. of Med. and Sur.	2	..	..	..	1	1	50.0
Grand Rapids Med. Coll…….	2	..	..	..	1	1	50.0
University of Michigan (R)….	111	51	4	7.2	56	0	0
University of Michigan (H)….	13	4	0	0	9	0	0
MINNESOTA……………— *12.0*	*151*	*74*	*22*	*22.9*	*49*	*6*	*10.9*
University of Minnesota (H)….	1	..	..	..	1	0	0
University of Minn. (R)…….	115	61	12	15.8	37	2	5.1
Hamline University …………	35	10	10	50.0	11	4	26.7
MISSOURI‡……………… —	*393*	..	..	..	*333*	*60*	*15.2*
Medico-Chirurgical, Missouri …	121	..	..	..	10	2	16.7
University Md. C., Kansas City.	50	..	..	..	47	3	6.0
Kansas City Hahne. Med. Coll…	4	..	..	..	3	1	25.0
Kansas City Med. Coll. ………	36	..	..	..	33	3	8.3
Eclectic Medical University ….	3	..	..	..	2	1	33.3
Central Medical College……….	17	..	..	..	12	5	29.4
Ensworth Medical College…….	16	..	..	..	9	7	43.7
Barnes Medical College ………	59	..	..	..	43	16	27.1
St. Louis University …………	85	..	..	..	75	10	11.8
Coll. of P. and S., St. Louis….	42	..	..	..	36	6	11.6
American Medical College …….	7	..	..	..	5	2	28.6
Homeo. College of Missouri…..	5	..	..	..	5	0	0
Washington University ………	50	..	..	..	46	4	8.0
University of Missouri ………	7	..	..	..	7	0	0
NEBRASKA……………— *66.6*	*36*	*1*	*5*	*83.3*	*25*	*5*	*16.7*
University of Nebraska………	15	0	2	100.0	10	3	23.1
Creighton Medical College…….	13	0	1	100.0	11	1	8.3
Lincoln Medical College………	8	1	2	66.7	4	1	20.0
NEW HAMPSHIRE… ………… —	*15*	*4*	*0*	*0*	*11*	*0*	*0*
Dartmouth Medical College …..	15	4	0	0	11	0	0
NEW YORK………………+ *8.1*	*622*	*512*	*10*	*1.9*	*90*	*10*	*10.0*
Albany Medical College………	53	46	0	0	7	0	0
College of P. and S., New York.	210	159	6	3.6	42	3	6.7
Cornell University …………	79	68	0	0	11	0	0
Eclectic Med. Coll., New York..	16	13	0	0	0	3	100.0
Long Island College Hospital…	83	72	4	5.3	5	2	28.6
New York Homeo. Med. Coll….	24	21	0	0	2	1	33.3
N. Y. Woman's Medical Coll….	10	8	0	0	2	0	0
University and Bellevue M. C…	61	46	0	0	14	1	6.7
Syracuse University …………	32	30	0	0	2	0	0
University of Buffalo………..	54	49	0	0	5	0	0
NORTH CAROLINA. ………+ *21.5*	*84*	*33*	*14*	29.8	*18*	*19*	*51.3*
Leonard Medical College…….	45	5	6	54.5	16	18	52.9
North Carolina Medical College.	30	20	7	25.9	2	1	33.3
University of North Carolina..	9	8	1	11.1	..	..	..
OHIO…………………+ *18.1*	*286*	*170*	*5*	2.8	87	23	*20.9*
Western Reserve University….	25	20	0	0	5	0	0
Cleveland Coll. of P. and S…..	18	16	0	0	1	1	50.0
Cleveland Homeo. Med. Coll….	27	12	0	0	15	0	0
Eclectic Medical Institute…….	48	11	1	8.3	25	11	30.5
Medical College of Ohio………	41	28	0	0	10	3	23.0
Pulte Medical College…………	8	3	0	0	4	1	20.0
Miami Medical College ………	24	20	0	0	4	0	0
Ohio Medical University………	51	32	2	5.9	11	6	35.3
Starling Medical College………	36	28	1	3.4	5	2	28.6
Toledo Medical College………	8	0	1	100.0	7	0	0
OREGON………………— *55.5*	*47*	*20*	*25*	*55.5*	*2*	*0*	*0*
University of Oregon ………	36	15	19	5.6	2	0	0
Willamette University ………	11	5	6	54.5	..	..	..
PENNSYLVANIA……………— *4.2*	*676*	*407*	*38*	*8.5*	*221*	*10*	*4.3*
Temple College ………………	2	1	0	0	1	0	0
University of Pennsylvania……	157	86	2	2.3	66	3	4.3
Hahn. M. C. of Philadelphia …	51	33	0	0	17	1	5.5
Jefferson Medical College …….	209	117	5	4.1	84	3	3.4
Woman's M. Coll. Pennsylvania	48	25	2	7.4	21	0	0
Medico-Chirurgical Coll., Pa….	121	77	19	19.8	22	3	12.0
Western Pennsylvania M. C….	88	68	10	12.8	10	0	0
SOUTH CAROLINA…………— *26.9*	*32*	*19*	7	*26.9*	*6*	*0*	*0*
Med. Coll. of South Carolina…	32	19	7	26.9	6	0	0
TENNESSEE………………+ *5.7*	*372*	*55*	*27*	*32.9*	*178*	*112*	*38.6*
Tennessee Medical College……	17	11	1	8.3	3	2	40.0
Knoxville Medical College……	7	0	1	100.0	1	5	83.3
University of Nashville ………	56	13	3	18.8	32	8	20.0
Vanderbilt University ………	25	6	0	0	17	2	10.1
University of Tennessee………	34	7	7	50.0	13	7	35.0
Meharry Medical College …….	55	3	6	66.7	24	22	47.8
Memphis Medical College …….	77	7	2	22.2	45	23	33.8
University of South …………	57	1	0	0	29	27	48.2
Chattanooga National M. C….	..	..	..	..	..	..	..
Chattanooga Medical College …	42	7	5	41.7	14	16	53.3
University of Tennessee………	2	0	2	100.0	..	..	..
VERMONT……………..+ *15.8*	*67*	*29*	*0*	*0*	*32*	*6*	*15.8*
University of Vermont……….	67	29	0	0	32	6	15.8
VIRGINIA…………………— *5.7*	*161*	*91*	*15*	*14.9*	*49*	5	9.2
Medical College of Virginia ….	50	28	9	24.3	10	3	23.1
University College of Medicine..	57	38	3	7.3	14	2	12.5
University of Virginia ………	54	25	4	13.8	25	0	0
TEXAS…………………+ *10.3*	*33*	*12*	*4*	*25.0*	*11*	*6*	*35.3*
Fort Worth University ………	4	2	0	0	1	1	50.0
University of Texas …………	11	10	0	0	1	0	0
Baylor University …………	7	0	3	100.0	4	0	0
Dallas Medical College……….	3	..	..	..	1	2	66.7
Gate City Medical College…….	5	..	..	..	2	3	60.0
Southwestern University………	2	0	1	100.0	1	0	0
Coll. of P. and S., Dallas …….	1	..	..	..	1	0	0
WISCONSIN………………+ *33.6*	*36*	*29*	*2*	*6.4*	*3*	*2*	*40.0*
Milwaukee Medical College…..	20	18	0	0	0	2	100.0
Coll. of P. and S., Wisconsin….	16	11	2	14.6	3	0	0
+ 11.3	2,467	1,382	153	10.0	733	199	21.3

Figures in italics show totals by states.

* Examination reports not received.

† Most graduates of home colleges registered without examination.

‡ No record kept of year of graduation, so could not differentiate between graduates and undergraduates.

TABLE H. REJECTIONS BY LICENSING BOARDS.

Arranged in order of the percentage of rejections by each State Examining Board. Based on Table C.

State.	Colleges of all States.				Colleges of Home States.				Colleges of Other States.			
	Total Number of Applicants.	Number Registered.	Number Rejected.	Percentage Rejected.	Total Applicants.	Number Registered.	Number Rejected.	Percentage Rejected.	Total Applicants.	Number Registered.	Number Rejected.	Percentage Rejected.
Mississippi	135	71	64	47.4	....	....	...	...	137	71	64	47.4
Oregon	96	53	43	44.8	45	20	25	55.5	51	22	18	35.3
Nebraska	26	16	10	38.5	6	1	5	83.3	20	15	5	25.0
California	202	125	77	38.1	124	82	42	33.9	78	43	35	44.9
West Virginia	137	85	52	37.9	....	....	...	...	137	85	52	37.9
New York	688	662	26	37.8	522	512	10	1.9	166	150	16	9.6
Maryland	187	118	69	36.9	167	105	62	37.1	20	13	7	35.0
South Carolina	65	44	21	32.3	26	19	7	26.9	39	25	14	35.9
Texas	68	47	21	30.9	16	12	4	25.0	52	35	17	32.7
Tennessee	102	71	31	30.4	82	55	27	32.9	20	16	4	20.0
Montana	35	25	10	28.6	....	....	...	...	35	25	10	28.6
Rhode Island	58	42	16	27.6	....	....	...	...	58	42	16	27.6
Delaware	26	19	7	26.9	....	....	...	...	26	19	7	26.9
Virginia	181	133	48	26.5	107	91	16	15.0	74	42	32	43.2
New Hampshire	19	14	5	26.3	4	4	...	...	15	10	5	33.3
Minnesota	147	112	35	23.8	96	74	22	22.9	51	38	13	25.5
Dist. of Columbia	85	65	20	23.5	68	52	16	23.5	17	13	4	23.5
New Jersey	64	50	14	21.9	....	....	...	...	64	50	14	21.9
Indiana	284	230	54	19.0	143	116	27	18.9	141	114	27	19.1
Connecticut	75	61	14	18.7	20	20	...	...	55	41	14	25.4
Oklahoma	48	39	9	18.7	....	....	...	...	48	39	9	18.7
Massachusetts	302	252	50	16.5	140	127	13	9.3	162	125	37	22.8
South Dakota	37	31	6	16.2	....	....	...	...	37	31	6	16.2
Idaho	42	36	6	14.3	....	....	...	...	42	36	6	14.3
Utah	28	24	4	14.3	....	....	...	...	28	14	4	14.3
Arizona	30	26	4	13.3	....	....	...	...	30	26	4	13.3
Arkansas	30	26	4	13.3	....	....	...	...	30	26	4	13.3
Washington	115	100	15	13.0	....	....	...	...	115	100	15	13.0
Iowa	227	201	26	11.4	146	139	7	4.8	81	62	19	23.4
Pennsylvania	608	519	89	11.3	445	407	38	8.5	163	112	51	31.3
Kansas	166	149	17	10.2	17	17	...	...	149	132	17	11.4
Alabama	124	112	12	9.7	43	41	2	4.6	81	71	10	12.3
Colorado	193	175	18	9.7	43	37	2	5.1	154	138	16	10.4
Louisiana	107	97	10	9.3	52	48	4	7.7	55	49	6	10.9
Florida	23	21	2	8.7	....	....	...	...	23	21	2	8.7
North Dakota	69	63	6	8.7	....	....	...	...	69	63	6	8.7
Kentucky	35	32	3	8.6	*5	5	...	...	30	27	3	10.0
Maine	60	57	3	5.0	18	18	...	...	42	39	3	7.1
Michigan	83	79	4	4.8	62	61	1	1.6	21	18	3	14.3
Wisconsin	93	89	4	4.3	31	29	2	6.4	62	60	2	3.2
Illinois	766	736	30	3.9	569	533	16	2.8	197	183	14	7.1
Ohio	208	203	5	2.4	175	170	5	2.9	33	33	...	...
Vermont	42	41	1	2.4	29	29	...	...	13	12	1	7.7
Nevada	26	26	....	....	....	....	...	...	26	26	...	...
Wyoming	18	18	....	....	....	....	...	...	18	18	...	...
Totals	6,280	5,278	1,002	15.5	3,244	2,877	367	11.3	3,036	2,401	635	20.9

* Registers a considerable number of graduates of home colleges without examination. No reports from Georgia and Missouri.

physicians and, if the results of these examinations may be taken as a guide, the class of physicians. In the last two columns the rank of each state is given; in the first according to the number of applicants, and in the second according to the success of the graduates in passing the examinations.

Table F, also based on the first four tables, allows us to make comparisons among the larger colleges, or the 51 colleges having 50 or more candidates examined during the year 1905. There were 154 colleges in all which had candidates examined by state boards, of which 14 had 100 or more examined and 37 had between 50 and 100 examined. Therefore, 33 per cent. of the colleges had 50 or more candidates, while 103 (67 per cent.) had less than 50 each. There were 70 (45 per cent.) which had less than 25 candidates each. In other words, 2,350, or about 31 per cent. of all the candidates, came from 14, or 9 per cent., of all colleges, while 4,893, or 64 per cent., of all candidates came from 51, or 33 per cent., of the colleges.

In making comparisons, beside the percentage, one must consider also the number examined and the number of state boards before which the college was represented. The above group—Table F—is arranged according to the number examined. As to the representation before state boards: Jefferson leads, its graduates appearing in 35 states. Rush Medical College comes next, its graduates appearing in 30. Northwestern University Medical School and the University of Pennsylvania each had graduates appearing in 27 states. The College of Physicians and Surgeons, Chicago, the College of Physicians and Surgeons, New York, and the Baltimore Medical College each had representatives in 26 states.

Table G is based on the examination of graduates of 1900 to 1905, inclusive, i. e., *"recent graduates."* All graduates who were examined in the state in which the college is located are grouped in one column, while all the graduates of that college who were examined in other states are in another column. This is for the purpose of showing the number of graduates who stay in the state in which the college is located; also to show what is evidently a fact, that, as a rule, the graduates of a certain school have a much better chance of passing the examination in the state in which the school is located than they have elsewhere. This should always be con-

The ideal basis for reciprocity would of course be uniform—and therefore equally high—standards by all the boards. But this is considered by many an idea too utopian to be considered. As conditions now exist, states having comparatively equal standards have arranged for reciprocity on two different bases: (1) On the basis of an examination before an examining board, and (2) on a diploma without an examination.

1. On the Basis of an Examination.—This basis is acceptable to a larger number of states than the second. A physician must have passed an examination before an examining board and (under most provisions) have resided in that state a year succeeding the examination, whereon he may register in any other state of the group through reciprocity without examination.

2. On the Basis of a Diploma Without Examination.—This applies only where the applicant was registered in another state prior to the date when the state receiving him through reciprocity required an examination. For example, a physician of good repute was registered to practice medicine in Nebraska in 1880. For good reasons he desires to change residence to Minnesota. Taking for granted his credentials were otherwise acceptable, he is eligible to registration in that state through reciprocity, since Minnesota did not require examination of all applicants until Jan. 1, 1887. Those who registered in Nebraska since Jan. 1, 1887, would not be eligible through reciprocity unless they could register on Basis No. 1.

The reciprocity table published herewith is based on statements from the various examining boards and other data, which we have reason to believe is reliable. The figures given on the table indicate (1) whether reciprocity is on the basis of an examination, and (2) whether reciprocity is on either the basis of an examination or on a diploma without examination. In the table are a number of states which apparently do not reciprocate with others, although having authority under their laws to do so. In regard to reciprocity with these, one should refer to the special statements below regarding reciprocity with these states.

While the various states reciprocate, as stated in the table, most of them have other requirements. All of them require that the applicant must be of good moral character and that he shall hold credentials from a recognized medical college. Many require one or two years of reputable practice, and some require that he must have been a member of a county, state or national medical society for at least a year. Regarding these special requirements one should correspond with the secretary of the examining board of the state where he wishes to locate.

The laws of the following states have provisions for reciprocity, but no information is at hand as to what arrangements have been made with any states in regard to it:

California.—"The board may, in its discretion, accept and register, on payment of the registration fee, and without examination of the applicant, any certificate which shall have been issued to him by the medical examining board of the District of Columbia, or of any state or territory of the United States; provided, that the legal requirements of such board shall have been, at the time of issuing such certificate, in no degree or particular less than those of California at the time when the certificate shall be presented for registration to the board created by this act; and provided, further, that the provisions in this paragraph contained shall be held to apply only to such of said medical examining boards as accept and register the certificates granted by this board, without examination of them, of the ones holding such certificate." The registration fee is $20.00. California does not yet reciprocate with any other state.

Colorado.—It is the policy of this board to license without examination applicants who have been legally engaged in the practice of medicine in other states, provided they qualified in those states by offering in evidence a standard of educational and moral qualification which was required in Colorado for the corresponding year. This board will also register without examination all applicants who have been admitted and are duly authorized and empowered to practice medicine in any of the regular medical departments of the Army, Navy and Public Health and Marine-Hospital Service of the United States of America, and who are in good standing and of good repute in such Federal service.

Connecticut.—The license granted by any other state may be accepted on presentation of satisfactory evidence that said license was granted after an examination equivalent to that of the Connecticut board.

Delaware.—The board indorses the certificate of license issued after examination by any state medical examining and licensing board whose standard of requirements is substantially the same as that of Delaware or higher, irrespective of reciprocity, provided the applicant furnishes satisfactory proof of good moral character. Reciprocal registration fee, $50.00.

District of Columbia.—The board is authorized to license, without examination, any applicant who has been engaged in the practice of medicine and surgery in any other state, territory or insular possession of the United States or a foreign country for the last two years, and who received his license under conditions equivalent to those required in the District of Columbia; provided, that the licentiates of the district board are granted a similar privilege.

Kansas.—The board may accept the certificate of the board of registration and examination of any other state or territory or any foreign country whose standards of qualification for practice are equivalent to those of this state.

Maine.—Any person who is eligible for examination before this board, and who has been examined and registered or licensed by the examining board of any other state which maintains a standard of education at least equal to that required in this state, may be registered on complying with the requirements of the board.

Missouri.—The legislature passed a reciprocal clause granting us the privilege to hold reciprocal relation with states having a standard of requirements equal to the requirements of this state.

New Hampshire.—Applicants examined and licensed by other state examining boards registered by the regent as maintaining standards not lower than those provided by this state, may, on payment of $5.00, be licensed without examination.

New Jersey.—New Jersey will now indorse the medical license issued by any state after examination, whose educational, examining, and licensing requirements are substantially equal to, or higher than those of New Jersey, irrespective of reciprocity, provided the applicant complies with the conditions of indorsement. The fee is $50.00.

New Mexico.—On payment of the regular fee, the board may grant licenses to licentiates of other states and territories which have like requirements, and when said states and territories reciprocate in this matter.

RECIPROCITY TABLE.

	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.	Delaware.	District of Columbia.	Florida.	Georgia.	Idaho.	Illinois.	Indiana.	Indian Territory.	Iowa.	Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.	Michigan.	Minnesota.	Mississippi.	Missouri.	Montana	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New Mexico.	New York.	North Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.
Alabama																																																		
Arizona																																																		
Arkansas																																																		
California																																																		
Colorado								1							1															1																				1
Connecticut																																																		
Delaware												1								1										1																1			1	
District of Columbia					1																	1																							1	1				1
Florida																																																		
Georgia										2					2		2			2		2					2																2						2	1
Idaho																																																		
Illinois													1		1	1			1	1		1	1				1			1				1	1					1					1				1	1
Indiana												1			2	2	2		2	2		2					2	2		2					1								1			1			2	
Indian Territory																																																		
Iowa					1					2		1	2			2	2		2	2		2	1		1		2	2		1				2						2	1		2						2	1
Kansas												1	2		2		2			2		2	2				2			1																			2	1
Kentucky								2		2			2		2	2				2		2					2				2			1	2					2									2	
Louisiana																																																		
Maine												1	1		1					2		2	2							1				1	2					1					1					1
Maryland							2	2		2		1	2		2	2			2			2					2		2						2		2			2			2		1	1			2	1
Massachusetts																																																		
Michigan								1		2		1	2		2	2	2		2	2			2		2		2	2		1		2		1	2					1					2	1			2	1
Minnesota												1			2	2			2	1		2			1			1		1					2					1	1								2	1
Mississippi																																																		
Missouri															1							2	1							1																				1
Montana																																																		
Nebraska										2		1	2		2	2				2		2	2												1											1			2	1
Nevada													2		2							2	1																	1			2							
New Hampshire																																																		
New Jersey												1							1			1										1			1										1	1			1	
New Mexico																																																	2	
New York																						1								1																				
North Carolina																																																		
North Dakota												1			2		1		1			1																							1				1	1
Ohio								2				1	2						2	2		2	2				2			1															1	1			2	
Oklahoma																																																		
Oregon																					2																													
Pennsylvania																																																		
Rhode Island																																																		
South Carolina												1				1			1	1			1					1		1					1								1			1			1	1
South Dakota															1								1																										1	
Tennessee																																																		
Texas																														1																1				
Utah																																																		
Vermont								1				1							1	1		1								1				1	1															1
Virginia							1					1	1							1		1					1			1					1					1			1							
Washington																																																		
West Virginia																																																		
Wisconsin							1			2		1	2		2	2	2			2		2	2				2			1	2			1	2					1	1									1
Wyoming					1					1		1			1	1			1			1	1		1		1							1						1					1				1	

Key: 1, Reciprocates on basis of an examination. 2, Reciprocates on diploma or examination.

South Dakota.—The board is empowered to accept and license on the payment of the regular fee ($20.00), without examination, the holder of a license issued by the examining board of any other state or territory having requirements equal to those of the state of South Dakota at the time when such license is presented for registration, and who grant reciprocal privileges.

Utah is authorized to reciprocate with states having equally high standards.

Vermont.—The board will endorse the certificate or license of any state medical examining and licensing board in accordance with the following section of the Public Acts of 1904: The board shall issue licenses without examination to reputable physicians and surgeons who shall personally appear and present a certified copy of certificate of registration or license, which has been issued to said applicant in another state in the Union, where the requirements for registration shall be deemed by said board to be equivalent to those of this state, provided such state shall accord a like privilege to holders of a license granted under the laws of this state. Each applicant for such license shall pay to the board the sum of $10.00.

Wyoming.—The board may, in its discretion, grant certificates on licenses issued by the medical examining board of the District of Columbia, or of any state or territory of the United States, provided they have been granted on requirements no less than those of Wyoming, and provided, further, that the board of the state or territory issuing the license reciprocates on the same terms with Wyoming.

No Reciprocity.—The following states have made no statement in regard to or no arrangements for reciprocity:

Alabama.
Arizona.
Arkansas.
Florida.
Idaho.
Indian Territory.
Louisiana.
Massachusetts.
Mississippi.
Montana.
North Carolina.
Oklahoma.
Oregon.
Pennsylvania.
Rhode Island.
Tennessee.
Washington.
West Virginia.

EDUCATION NOTES.

New Colleges.

Nine new schools have been organized since June, 1905, five of which had matriculants. These colleges are the College of Physicians and Surgeons, Little Rock, Ark.; the Atlanta School of Medicine, Atlanta, Ga.; the Indiana Medical College, School of Medicine of Purdue University, Indianapolis, Ind.; the State College of Physicians and Surgeons, Indianapolis, Ind.; the Mississippi Medical College, Meridian, Miss.; the Nebraska College of Medicine, Lincoln, Neb.; the Medical Department of the University of North Dakota, University, N. Dak.; the College of Physicians and Surgeons, Memphis, Tenn., and the Medical Department of the University of Utah, Salt Lake City, Utah.

Colleges Which Have Raised Standards During the Past Year.

The colleges listed below, according to their announcements, have made an increase in entrance requirements during the past year:

University of California, two years of work in a college of arts.
University of Missouri, one year in a college of arts.
George Washington University, two years of work in a college of arts, beginning with the session of 1909-10.
University of Texas Medical Department, the equivalent of one year's work in a college of arts, beginning in 1909.

Colleges which have already been requiring one or more years of work in a literary college are the following:

Harvard Medical School requires a degree from a college of liberal arts.
Johns Hopkins Medical School requires a degree.
Western Reserve University Medical Department, three years.
Rush Medical College, two years.
Indiana University Medical School, two years.
University of Minnesota, both regular and homeopathic departments, one year now, will require two years hereafter.
College of Physicians and Surgeons, New York, requires one year.

The faculties of the following colleges have voted to require a preliminary year in physics, chemistry, biology and languages to apply to all students beginning medical study after Jan. 1, 1910:

College of Physicians and Surgeons, San Francisco.
Northwestern University Medical School.
Jenner Medical College.
State University of Iowa, both regular and homeopathic departments.
University of Kansas, Medical Department.
College of Physicians and Surgeons, Baltimore.
College of Physicians and Surgeons, Boston.
Cleveland Homeopathic Medical College.
Cleveland College of Physicians and Surgeons.
University of Tennessee Medical Department.
Dearborn Medical College (evening classes) has extended its course to five years.

The following colleges, according to their announcements, have lengthened their annual sessions as follows:

1. Medical College of Alabama, from six to seven months.
2. University of Arkansas, from six to seven months.
3. College of Physicians and Surgeons, Los Angeles, from eight to eight and one-half months.
4. Denver Homeopathic Medical College, from seven to eight months.
5. Georgetown University, from eight to eight and one-half months.
6. Atlanta College of Physicians and Surgeons, from six to seven months.
7. Atlanta School of Medicine, from six to seven months.
8. Hahnemann Medical College, Chicago, from seven to eight months.
9. Physiomedical College of Indiana, from seven to eight months,
10. Keokuk Medical College of Physicians and Surgeons, from seven to eight months.
11. Maryland Medical College, from eight to nine months.
12. Baltimore University Medical Department, from six to nine months.
13. Detroit College of Medicine, from seven to eight months.
14. Barnes Medical College, from seven to eight months.
15. Western Reserve University, from eight to eight and one-half months.
16. Willamette University, from six to seven months.
17. University of Oregon Medical Department, from seven to seven and one-half months.
18. University of Tennessee Medical Department, from six to seven months.
19. Chattanooga Medical College, from six to seven months.
20. Memphis Hospital College, from six to seven months.
21. Eclectic Medical College of Indiana, from six to seven months.

Distribution of Medical Students.

Table 2. on pages 630 to 633, shows the distribution of students of each college by states. The influence of the proximity of the medical school is seen in the fact that states which have medical colleges have more students in proportion to the population than those which have none. Only three states contributed over 2.000 students: New York, 2,361, Illinois, 2,383; Pennsylvania, 2,115. Two states contributed over 1,000 students, but less than 2,000; Missouri, 1,087, and Texas, 1,026. Ohio contributed 975 students; Massachusetts, 923; Kentucky, 891; Iowa, 828, and Indiana, 815. Of the states having the fewest students, Arizona and Wyoming each had 9. Nevada and New Mexico each contributed 23; Montana, 27; Idaho, 41; Delaware, 54; North Dakota, 61, and South Dakota, 79. The states not mentioned contributed between 100 and 700 each. Only one college failed to furnish the information needed in time for publication. In this instance, that the totals may be more nearly accurate, we have inserted the distribution of last year. All the states from whom no reports were received last year, sent in their reports this time, so our report is practically complete.

Etiology of Abdominal Conditions.—J. Gibbs, in the *Canada Lancet*, June, 1906, traces the etiology of infections of the pancreas, duodenum, stomach, gall bladder and liver to the obstruction and stagnation in the intestines and glandular ducts occasioned by prolapse of the organs following relaxation of the abdominal walls.

Medical News

ARKANSAS.

Personal.—Dr. Joseph P. Sheppard, Little Rock, will succeed Dr. William P. Illing as superintendent of the Pulaski County Hospital on October 31, when Dr. Illing's resignation will become effective.——Dr. George H. Martindale, Hope, is reported to have shot and killed Sam Thomas at Patmos, August 14.——Dr. George S. Brown has been elected president, Dr. George D. Dickerson, secretary, and Dr. Joseph S. Westerfield a member of the Conway Board of Health.

CALIFORNIA.

Banquet to Red Cross Director.—A banquet was given at the St. Francis Hotel, July 31, in honor of Dr. Edward T. Devine, director of the American Red Cross, and after the banquet a silver loving-cup was presented to him by the citizens of San Francisco.

Mortality.—The mortality for June was at an annual death rate of 15.5 per 1,000. Tuberculosis was the chief cause of death, followed by diseases of the circulatory and nervous systems and by pneumonia. The most fatal epidemic diseases in order were typhoid fever, measles, whooping-cough, diphtheria, croup and influenza.

Hospitals to Be Established.—Dr. Winslow Anderson has petitioned for a permit to reëstablish the St. Winifred's Sanatorium at 1025 Sutter Street. He proposes to put up a reinforced concrete building.——The regents of the University of California have planned to establish a students' hospital on the campus at Berkeley.

Personal.—Dr. R. S. Lanterman, Los Angeles, was caught between the step of his carriage and a heavy truck, August 5, and suffered severe contusions of the leg.——Dr. Quinton J. Rowley, Downey, who has been in practice for many years, retired August 1.——Dr. Chester Rowell, Fresno, who has been dangerously ill, is slightly improved.

College News.—The College of Physicians and Surgeons, San Francisco, has petitioned the Board of Supervisors for permission to establish and maintain a medical college at its old address on Fourteenth Street between Woodward Avenue and Stevenson Street.——The regents of the State University, Berkeley, have arranged that the old mining laboratory building is to be used by the department of anatomy and that the other departments of the medical college for the first two years will be housed in the civil engineering building.

Surgeons for Relief Work.—The Board of Health of San Francisco has appointed the following surgeons to take charge of the relief work of the city: Drs. Charles Clark, John A. Haderle. H. V. Prouty, David Friedlander, Herbert A. Gale, Arthur B. Nelson, William J. Gavigan, G. C. Albee, Walter S. Johnson, Emil V. Lonigo, Silvis J. Onesti, Frederick R. Starr, Grace Simon, James V. Hughes, Thomas B. W. Leland, George L. Helms, William C. Hopper, William R. P. Clark, William C. Voorsanger, John M. Quigley, Benjamin Apple, William F. McNutt, Jr., Watts and Roland E. Hartley.

COLORADO.

New Hospital.—The Santa Fé Hospital Association has appropriated $25,000 for the erection of a new hospital at La Junta.

Personal.—Dr. Richard V. Barta, Denver, has been appointed a police surgeon to succeed Dr. Wilbur L. Davis, resigned.——Dr. Raynor E. Holmes, Canon City, who underwent an operation in Pueblo for appendicitis, July 16, is making a satisfactory recovery.

Fined for Failure to Report Disease.—Dr. Chelsea M. Erb, Leadville, charged with having violated the city ordinance, July 31, by failing to report a case of diphtheria within twenty-four hours after its discovery, was found guilty and fined $10 and costs. The case was appealed to the county court.

CONNECTICUT.

Off for Europe.—Dr. William F. Verdi, New Haven, sailed for Europe on the *Kaiser Wilhelm II*, July 17.——Dr. John B. Boucher sailed for Germany, August 4.

July Deaths.—During the month of July, 1,525 deaths were reported, 276 more than for June, 125 less than in July, 1905, and 92 more than the average number of deaths during July for the five preceding years. Infectious diseases caused 119 deaths, or 15 per cent. of the total mortality.

Communicable Diseases.—On August 11. eight cases of typhoid fever were found on a single milk route in New Haven, and on the same milk route five more cases were discovered August 13.——On August 11, six cases of diphtheria were reported from Windsor Locks. The proper quarantine precautions have been taken.

Infectious Diseases.—During July 4 cases of smallpox were reported from 3 towns; 57 cases of measles, with two deaths, from 38 towns; 55 cases of scarlet fever from 24 towns; two cases of cerebrospinal fever. from two towns: 806 of diphtheria, with two deaths. from 22 towns: 92 cases of whooping-cough. with 5 deaths. from 22 towns; 65 cases of typhoid fever. with 4 deaths. from 28 towns: and 58 cases of consumption. from 25 towns. with 23 deaths from the disease.

DELAWARE.

Delaware to Fight Tuberculosis.—The Delaware Anti-Tuberculosis Society has been incorporated and will erect buildings as soon as funds can be secured. Dr. John J. Black is the leader in the movement. The society was organized two months ago at a meeting in Wilmington, when addresses were made by Dr. Lawrence F. Flick. Dr. Joseph Walsh, and other Philadelphians interested in the work. Efforts are being made to raise the money needed for the buildings. and an appropriation by the state legislature is expected next winter. The society will conduct a sanatorium and dispensary for consumptives in the same manner as those at White Haven and elsewhere. It is stated that patients will be cared for in tents until the buildings are completed.

DISTRICT OF COLUMBIA.

Personal.—Dr. John P. Cole. Washington, suffered painful injury by being thrown from his carriage in a runaway. July 28.——Dr. Alfred Richards has been appointed police surgeon of the third surgical district, vice Dr. Charles C. Marbury, resigned.

Less Typhoid.—There was a decrease in typhoid fever in the District during the week ended August 11. in which 72 cases were reported. Since the first of the year 519 cases have been reported. and during the same period of 1905 only 395 cases. There were 26 cases under treatment in Washington August 12.

Health of the District.—During the week ended August 4 there were 139 deaths reported, 76 among the whites and 63 among the colored population, equivalent to an annual mortality of 22.1 per 1,000. The chief causes of death were: Diarrheal diseases. 18, or 3 less than in the previous week; consumption. 15. 1 less than for the preceding week: kidney disease. 10: heart disease. 9; malignant diseases and pneumonia, each 6; typhoid fever and cerebral hemorrhage. each 5. During the week there were 78 new cases of typhoid fever reported and 21 patients were discharged.

GEORGIA.

Personal.—Dr. and Mrs. J. M. Baird, Columbus, sailed for Europe August 21 on the *Kaiser Wilhelm II*.

Provision for Insane Consumptives.—In a bill passed by the house. August 3. provision is made for $10,000 of the last appropriation voted for the State Sanatorium in Milledgeville, to be used for the erection of a building for the isolation of insane consumptives.

Augusta College Notes.—The faculty of the Medical College of Georgia has petitioned the city council for $5.000 to enlarge the municipal laboratory.——Drs. Charles W. Crane, William C. Kellogg. William Z. Holliday and William C. Lyle have been added to the faculty of the college.

Scholarships in Medical Colleges.—The Governor has issued an order naming the following successful competitors for the beneficiary scholarships in the medical colleges of Georgia: State at Large—Frank C. Tharpe. Buena Vista; Frank P. Norman. West Point: W. E. Braswell. Monroe; John A. Brown, Athens; First District—Harry Sutten, Swainsboro; George L. Smith, Swainsboro: Second District—G. T. Crozier. Cedar Springs; Leonard Baker. Ansley; Third District—Guy C. Lunceford. Americus: Jesse H. Riley. Grovania: Fourth District—Thomas Grant. West Point: W. E. Drane. Buena Vista; Fifth District—W. H. Galloway. Monroe; Mason Smith, Douglassville: Sixth District—W. H. Austin. Griffith; George L. Johnson. Yatesville: Seventh District—W. A. Davis. Marietta, R. F. D.: Irby Simmons. Hiram: Eighth District—O. S. Wood, Madison: G. T. Bernard. Athens: Ninth District—J. S. Burrell. Burton: Ralph Freeman. Dacula: Tenth District—John L. Lee. Augusta: L. B. Royal. Hephzibah; Eleventh District—W. T. Price, Jr.

ILLINOIS.

Personal.—Dr. Albert H. Dollear, Jacksonville, has been appointed assistant physician at the Illinois Western Hospital for the Insane, Watertown.

Defies State Board.—John Gregg. Sterling, who has been ordered by the State Board of Health to discontinue practicing massage and magnetic healing on penalty of being prosecuted for violation of the laws, is reported to have written to the State Board of Health that he would continue practicing and that he defied the board to stop him.

Smallpox.—A case of smallpox was reported from Evanston August 12, and the patient, who had come from Michigan a few days before, has been taken to the Isolation Hospital, Chicago.——Smallpox in mild form was discovered by the health officer of Peoria, August 13. Three children in one family were affected, and the entire family, consisting of father, mother and six children, were taken to the Detention Hospital. The disease is believed to have been communicated by a member of the family who recently contracted it in California.——A case of smallpox was discovered in a Chicago hospital August 14. The patient lived in a boarding-house in West Monroe street and had recently visited Milwaukee and Joliet.

Chicago.

Danger of Typhoid Epidemic.—According to newspaper reports residents in the southern part of Chicago are threatened with typhoid because of an official blunder in sewer construction, which has produced a dangerous condition of the drainage. The board of local improvements is constructing a new sewer system on Seventy-ninth street. and it is asserted that instead of building the lateral sewers connecting with the homes at the time the work on the sewers was being done, the contractors cut off the drain pipes leading to the street gutters and there is now no outlet for the waste water and sewage from the homes.

Deaths of the Week.—During the week ended August 18, 531 deaths were reported, 72 fewer than were reported during the week previous. The chief decreases in death causes were in acute intestinal diseases, 25; consumption, 10. and nephritis, 7. There was a sharp increase in the number of deaths from bronchitis, from 3 to 12. The mortality was equivalent to an annual death rate of 13.52 per 1,000. Acute intestinal diseases still led death causes with 125, followed by consumption with 53; violence, including suicide, with 48; nephritis with 42; pneumonia with 27; heart diseases with 25; cancer with 24, and nervous diseases with 20.

INDIANA.

Typhoid Fever.—Numerous cases of typhoid fever of a severe type are reported at Churubusco and vicinity.——The Secretary of the Board of Health of Evansville has analyzed the drinking water of that city and issued an urgent warning against the drinking of unboiled water.

July Diseases and Deaths.—During July diarrhea and cholera morbus were the most prevalent diseases in Indiana. Tonsillitis, rheumatism and dysentery were quite prevalent and there was a decrease in typhoid fever, as compared with July, 1905. There were reported 18 cases of smallpox from 7 counties. with 1 death. Tuberculosis caused 319 deaths during the month: cancer caused 108 deaths; pneumonia was much lessened as compared with the preceding month. Deaths from violence numbered 208, of which 7 were homicides, 13 suicides, and 188 accidental. Of the latter. 36 occurred on steam railways and 4 on the street cars. Burns and scalds caused 18 deaths. drowning 32, ptomain poisoning 3, poisoning 5, suffocation and lightning each 7, sunstroke 8, and mining accidents 6.

KANSAS.

Typhoid Fever.—Six cases of typhoid fever have been reported in Topeka, the largest number thus far reported in a single month.

Ill in Leavenworth.—Dr. William R. Van Tuyl, county physician of Leavenworth County, is ill at his home in Leavenworth.——Dr. Harley J. Stacey, Leavenworth, is suffering from septicemia.

Tuberculosis Census Planned.—The State Board of Health is endeavoring to secure as nearly a complete census of the tuberculosis in the state as possible. To each of the physicians in the state blanks will be sent for the report of the cases in his practice. The blanks also show the stage of the disease, the causation. and the previous general health of the patient.

LOUISIANA.

State Board of Health Moves.—The State Board of Health has taken a suite of rooms in the Hibernia Building, New Orleans, which will be ready for occupancy about October 1.

Typhoid Fever.—Owing to the numerous cases of typhoid fever at New Iberia, the milk supply has been placed under rigid examination and the character of the water supply is also being investigated.

Polyclinic and College Merged.—It is stated by the New Orleans *Democrat* that the arrangements have been practically completed for the merging of the New Orleans Polyclinic and Tulane University of Louisiana.

Personal.—Dr. J. Ashton Blanchard has been elected city health officer and president of the Shreveport Board of Health. ——Dr. A. H. Butler, New Orleans, has been appointed resident medical inspector at Tela, Honduras.

Hospital Notes.—At a regular meeting of the managers of the Truro Infirmary, it was decided to screen thoroughly the entire building, which is now in course of completion.——A sanitarium is to be built at Shreveport, to cost about $20,000.

Chagres Fever at Quarantine.—The steamer *Whitehall*, which arrived at Quarantine from Colon August 4, lost three of her complement of 21 men from chagres fever. The steamer was declared to be a menace to all ports and orders were given by the State Board of Health to hold it indefinitely at the Mississippi River Quarantine station.

Yellow Fever.—On August 19, Dr. Clifford E. Irion, Benton, president of the State Board of Health, sent out an announcement of a case of yellow fever at New Iberia, 125 miles from New Orleans. The patient was a mulatto boy, 12 years of age, living in an isolated part of the city. Dr. Irion has gone to New Iberia to take charge of the situation.

Seeks Information.—The State Board of Health is making every effort to secure as accurate and as reliable information as possible from the practitioners in the state regarding all cases of yellow fever. Circular letters have been sent to all physicians and parish health officers enclosing blank forms and asking them to report to the State Board of Health all cases of yellow fever in their practice.

Epidemic at Sabine Parish.—Dr. Fred J. Mayer, a special medical inspector of the State Board of Health, is investigating a peculiar infection in Florien Sabine, where an epidemic of spinal meningitis was reported, with a mortality of 90 per cent. Dr. Mayer considers the epidemic to be typhoid fever, and says that the death rate, which amounted to about 50 per cent., was the result of excessive doses of quinin and calomel.

Injunction Issued.—The State Board of Medical Examiners on August 13, filed a suit against D. N. Williams, New Orleans, claiming that he was practicing medicine without having first obtained a certificate as the law requires. Under the law, if Williams has been practicing medicine without warrant of law, he is liable to $100 fine and $50 attorney's fees. In the suit filed, an injunction was asked to restrain Williams from practicing medicine until he should have obtained a certificate, and Judge St. Paul ordered the issue of the injunction.

MARYLAND.

Baltimore.

Personal.—Dr. William E. Hoffman has been appointed city chemist, vice Dr. Gustav W. Lehman, deceased.——Dr. Alexander D. McConachie is taking a trip to Nova Scotia, New Brunswick and Newfoundland.——Dr. Joseph G. Evans, formerly of Baltimore, now assistant quarantine officer at Cristobal Colon, Canal Zone, is visiting his home in Marion, S. C.

Donation to Hospital.—The widow of the late Dr. Samuel L. Frank, who was the president of the Hebrew Hospital at the time of his death, will donate $75,000 to that institution to be used in the erection of a new hospital building adjoining the present one. The new building will be made the hospital proper and the present building will be used as a home for incurables and as a training school for nurses.

MASSACHUSETTS.

New Floating Hospital.—The new floating hospital sailed August 15, on her first trip with 80 permanent and 110 day patients aboard. Dr. Robert W. Hastings, resident physician of the hospital, is in charge of the boat. The cost of the boat, fully equipped, has been about $100,000.

Personal.—Dr. William J. Sullivan has resigned as trustee of the pauper institutions of Boston at Long Island. Dr. David D. Scannell and the other trustees, whose resignations were asked for by the Governor, it is reported, refused to resign, and were removed.——Dr. Frederick G. Smith, Summerville, has returned from Germany.

MICHIGAN.

Forbidden to Distribute Samples.—The authorities of Pontiac has forbidden the distribution of samples of patent medicines and circulars.

Personal.—W. L. Shuart, Battle Creek, has been appointed a member of the board of preliminary examiners for admission to medical colleges by the State Board of Registration in Medicine.——Dr. and Mrs. Alexander G. McLeod, Calumet, left for Scotland August 1.——Dr. James A. Ardiel, Grand Rapids, has returned from a two-months' trip to Great Britain.

Northern Michigan Physicians Meet.—At the annual meeting of the Upper Peninsular Medical Society, held in Escanaba, August 2 and 3, Menominee was decided on as the place for the next meeting, and the following officers were elected: President, Dr. Alfred F. Snyder, Escanaba; vice-presidents, Drs. Benjamin T. Phillips, Menominee and Charles H. Rodi, Calumet; and secretary, Dr. Robert A. Walker, Menominee.

Coroners Should Be Physicians.—At the annual meeting and picnic of the Ottawa County Medical Society, July 25, a decided stand was taken in favor of the position of coroner being held only by medical men, and the following resolutions were unanimously adopted, to be presented to the Republican County convention:

> The Ottawa County Medical Society wishes to impress on the public and on the county conventions, both Republican and Democratic, that in accordance with the proper performance of the duties of coroner, and especially for the public good, the office of coroner should be filled by a medical man, one fully conversant with medicolegal matters, necessary for the proper understanding of this office. As physicians of Ottawa County and as citizens who have always worked for the good of the people, the medical fraternity suggests that the nominations for the office of coroner be filled with the names of representative physicians instead of laymen.

MISSISSIPPI.

Fire Damage.—At a fire in Moorhead, July 2, Dr. W. A. Attaway suffered a loss of $3,000, partially covered by insurance.

New Hospital.—The Board of Trustees of the Mississippi Insane Hospital, Meridian, at its regular meeting, considered plans for two new hospital buildings, to be erected at a cost of $30,000.

Favorable Health Report.—On August 3, Dr. John F. Hunter, Jackson, Secretary of the State Board of Health, reported that the general health conditions of the state were never better at this period of the year. From no part of the state was contagious or infectious diseases reported, with the exception of a few cases of scarlet fever.

Medical College Officers.—The following are the officers of the Mississippi Medical College, which is to be opened about October 1: President, Dr. W. W. Hamilton; vice-president, Dr. T. A. Barber; secretary, Dr. O. W. Bethea; treasurer, Dr. T. J. Houston, and dean, Dr. N. L. Clarke, and these officers constitute the executive committee. The following have been elected members of the faculty of the institution: Dr. N. L. Clarke, dean and professor of diseases of children; Dr. W. W. Hamilton, obstetrics and clinical genitourinary diseases; Dr. D. U. Wadsworth, surgery; Dr. J. H. Blanks, operative and clinical surgery; Dr. W. W. Reynolds, anatomy; Dr. M. J. Lowrey, gynecology; Dr. O. W. Bethea, pharmacology; Dr. H. F. Tatum, chemistry; Dr. W. J. Anderson, physiology and clinical gastrointestinal diseases; Dr. J. R. Tackett, theory and practice of medicine; Dr. W. H. Rowan, physical diagnosis and chest diseases; Dr. T. A. Barber, eye and ear; Dr. J. E. Seale, nose and throat; Dr. T. J. Houston, genitourinary surgery and venereal diseases; Dr. F. L. Walton, clinical medicine and clinical eye, ear, nose and throat. Lecturers and instructors: Dr. Saro Castle, bacteriology, hygiene and clinical dermatology; Dr. C. H. Ramsey, pathology, histology and electro therapeutics; Dr. James Bennett, demonstrator of anatomy and clinical lecturer on diseases of children; Dr. E. E. Robinson, clinical gynecology, minor surgery and surgical dressing; Dr. S. A. Witherspoon, medical jurisprudence.

NEW JERSEY.

Hospital Incorporated.—Incorporation papers have been filed for the Newark Private Hospital, with a capital of $50,000.

Anti-Tuberculosis Society.—A branch of the Association for the Prevention and Relief of Tuberculosis was organized in Camden, August 15, at the office of the mayor.

Typhoid Fever.—The seventeen cases of typhoid fever which were reported at Trenton for the week ended August 11, have been traced to one dairy, the owner of which was suffering from the disease. The Board of Health is making thorough plans for the inspection of milk in the city.

Personal.—Dr. Edmund Eastwood, Burlington, has resigned as city physician and Dr. Charles Dingee has been appointed to fill the vacancy.——Dr. Claude E. McNenney, Jersey City, was severely injured in a panic on the excursion steamer *Perseus* July 19. He was severely bruised and had one of his lower ribs fractured.——Dr. William O. Bailey, Newark, was thrown from his carriage in a runaway accident, August 9, and sustained severe lacerations and contusions and injuries of the right hip.

NEW YORK.

New York City.

Foul Bakeries.—The health board in its recent investigation has found 229 insanitary bakeries.

Personal.—Dr. J. Hubley Schall sailed on the *Minneapolis* August 18.——Dr. William T. McMannis returned last week from Europe.

Ellis Island Epidemic.—Trachoma has been unusually prevalent at Ellis Island, 127 immigrants having been deported on account of this disease during the first two weeks of August.

Public School Nurses.—In 1905, the Health Department spent $60,000 for nurses employed in public school and tenement-house work. An allowance of $55,000 has been made for the same purpose for the present year.

NORTH CAROLINA.

Typhoid Epidemic at Elizabeth Seminary.—Passed-Assistant Surgeon Anderson of the Public Health and Marine-Hospital Service, has completed his investigation of the typhoid fever epidemic which occurred in May at Elizabeth Seminary, Charlotte. The school has 180 pupils and teachers, 92 of whom boarded in the college, of these 33 developed a supposed enteric fever within the ten days from May 10 to May 20. Dr. Anderson thinks (*Public Health Reports*) that only 17 of these were genuine typhoid, since the other cases had a duration of less than a week. None of the day pupils, about 88 in number, developed enteric fever during this time. The epidemic seems to be traceable to an additional supply of milk which was first used at the college twenty-one days before the outbreak of the fever. Practically the entire water supply of the city of Charlotte is infected, apparently in consequence of the presence of cases of enteric fever on the watershed, and the unscientific and faulty method of conducting the filtration plant, which removes only about 88 per cent. of the bacteria. Bacteriologic and chemical study of the water supply, proper policing of the watershed, daily examinations of the water, closure of infected springs and wells, the regulation of the milk business and the ice industry, sterilization of milk bottles and utensils are recommended. It is suggested that ice ought not to be put directly into milk or drinking water. If these suggestions are carried out Dr. Anderson states that parents need have no hesitancy in sending their daughters to Elizabeth College for the ensuing session.

NORTH DAKOTA.

Personal.—Dr. Henry H. Ruger, Devil's Lake, one of the pioneer practitioners of North Dakota, had a severe cerebral hemorrhage a few days ago, but is now reported to be slowly improving.

District Medical Society Meeting.—The annual meeting of the Grand Forks Medical Society was held in Grand Forks, July 11, and the following officers were elected: Dr. Frank J. King, St. Thomas, president; Dr. James Grassick, Grand Forks, vice-president; Dr. Henry H. Healy, Grand Forks, secretary; Dr. Archie L. McDonald, Grand Forks, treasurer; Drs. W. H. Bates and Charles S. Crane, Grand Forks, delegates to the state society, and Dr. Charles A. Warner, Petersburg, censor.

OHIO.

Submit Plans for Tuberculosis Hospital.—The State Tuberculosis Hospital Commission met August 14 and considered the plans for the hospital submitted for their approval.

Free Antitoxin.—The State Board of Health has issued a circular to the boards of health and the officers regarding the free issue of antitoxin for the protection of the public health. The State Board has arranged to keep a stock of fresh antitoxin always on hand, and a supply will be sent immediately to any board of health on request.

Personal.—Dr. Joseph A. Stansell, Forest, is critically ill with nephritis and prostatitis.——Dr. Otto Juettner, Cincinnati, has been made an honorary member of the Roentgen Society of Breslau, Germany.——Dr. Philip S. Rieg, Toledo, has been appointed medical examiner for the U. S. Marine Corps for that district.

OREGON.

Medical School Remodeled.—The Medical Department of the University of Oregon, Portland, is to be remodeled at a cost of $3,000.

Spotted Fever.—Two serious cases of spotted fever are reported from the sheep country, one at Ironside and the other at Lockhard ranch.

Fire at State Hospital.—A fire at the Oregon State Insane Asylum, Salem, caused damage amounting to about $5,000, July 27. The fire was confined to one ward and owing to the fact that the patients had been given a weekly fire drill, they were marched quickly out of the building without casualties.

Personal.—Dr. Willis B. Morse, Salem, has been appointed a member of the State Board of Health, vice Dr. Harry M. Lane, Portland, resigned.——Dr. Oregon C. Blaney, Portland, had an attack of vertigo recently and fell, sustaining severe lacerations of the face.——Dr. Frederick Crang, Forest Grove, is reported to be critically ill.

Annual Report of Board of Health.—The State Board of Health of Oregon reports that during 1905 there were 3,066 deaths in the state, of which 486 resulted from communicable diseases. There were 4,439 births, of which 2,294 were males and 2,145 females. There were 645 deaths from diphtheria reported, 44 deaths from tuberculosis, and 83 from typhoid fever; smallpox was present at no time during the year to any alarming extent. During the year there were reported 375 cases of typhoid fever, 352 of diphtheria, 338 of measles, 265 of scarlet fever, and 133 of smallpox.

Hospital Notes.—The citizens of Forest Grove have formed a hospital association with Dr. Edgar H. Brown as president, and have decided to establish a hospital in that place. The association is to be incorporated with a capital stock of $5,000.——Drs. W. William Oblesby, and Best, Cottage Grove, are to establish a hospital at Drain.——St. Mary's Hospital, Albany, established by the Sisters of Charity of San Francisco in the Father Metayer mansion, with accommodations for twenty patients, will be opened September 1.——The new hospital at Milton was opened July 30, with appropriate ceremonies.

PENNSYLVANIA.

Personal.—Dr. Daniel B. D. Beaver, of Reading, sailed for Europe August 18.

School Teachers Vaccinated.—The Red Lion School Board has decided that all teachers employed in the borough schools must be successfully vaccinated before the opening of the public schools in September.

Typhoid at Pottsville.—Several cases of typhoid fever have been reported in Fishback, a suburb of Pottsville, and an investigation instituted by the State Department of Health to discover the origin of the infection found it in the water supply.

Site Chosen for Asylum.—The commission for the erection of the Pennsylvania State Institution for the Care and Treatment of the Criminal Insane, have decided on the site at Fairview, Wayne County. This land, comprising 625 acres, 2,000 feet above the sea level, was offered to the commission by the Delaware and Hudson Railroad Company, for $5, the cost of a deed. This is a saving to the state of $9,995 out of an appropriation of $10,000. The commission has the sum of $150,000 toward the erection of the buildings.

Restrained from Practice.—In a decree handed down by Judge Doty, Edward Barnes, Monessen, is restrained from practicing medicine in Westmoreland County. The Medical Association of Monessen made an investigation on a petition presented to it alleging that Barnes had never been a regular practitioner and that he had served a sentence in the state penitentiary for arson. The commissioner who was appointed to take the testimony recommended that Barnes' registration be set aside. It is understood that Barnes is now in Newcastle.

Societies Meet.—The Northwestern Medical Society held its fourth annual meeting at Warren, July 10. The following officers were elected: President, Dr. Morris S. Guth, Warren; vice-presidents, Drs. William A. Nicholson, Franklin; George B. Kalb, Erie; and Thomas L. Kane, Kane; secretary, Dr. James R. Durham, Warren; treasurer, Dr. Charles W. Schmehl, Warren.——The Lehigh Valley Medical Society, at its annual session at Easton, elected the following officers: Dr. Charles McIntyre, Easton, president; Dr. George W. Guthrie, Wilkesbarre. A. F. Myers, Blooming Glen, John H. Wilson, Bethlehem, and Obadiah H. Sproul, Flemington, N. J., vice-presidents; Dr. Clinton J. Kistler, Lehighton, secretary; Dr. William

Dr. Robert Kelly Library
[illegible]

P. Walker, South Bethlehem, assistant secretary; and Dr. Albert A. Seers, Bangor, treasurer.——At the annual meeting of the Montour County Medical Society, the following officers were elected: President, Dr. William H. Krickburn; vice-presidents, Drs. George A. Stock, Robert S. Patten; secretary and reporter, Dr. Cameron Schultz; corresponding secretary, Dr. Ida M. Ashenhurst; treasurer, Dr. Philip C. Newbaker; and censors, Drs. Philip C. Newbaker, Hugh B. Meredith and Edwin A. Curry, all of Danville.

Philadelphia.

Vital Statistics for July.—The report of the division of vital statistics shows that there were reported 2,786 deaths, 2,672 births, and 1,470 marriages during July.

Personal.—Dr. John W. Luther sailed for Europe August 18. ——Dr. and Mrs. Lewis H. Adler, Jr., have returned home after an extensive tour of the Northwest and Alaska.——Dr. Frederick P. Henry has sailed for Europe.

Public Baths Popular.—The hot weather in the early part of last week resulted in the largest attendance of the season at the public baths maintained by the city. The total number of bathers in the week were 677,842, of which 144,313 were men, 7,110 women, 502,652 boys, and 23,767 girls.

Bequests.—By the will of the late Abraham Reinheimer, contingent on the death of two brothers, $2,500 is to be distributed as follows: One-third to the Jewish Hospital, one-third to the Jewish Foster Home, one-sixth to the Jewish Maternity Association, and one-sixth to the Young Women's Union.

Medical Inspection for July.—The report of the Division of Medical Inspection of the Bureau of Health for July shows that for the month all inspections made, excluding schools, were 3,002; 355 fumigations were ordered, 148 cultures taken, 16 examined for special diagnosis. There were 89 injections of antitoxin made, and 151 vaccinations performed.

Bacteriologic Laboratory Report.—The report of the bacteriologic laboratory of the Bureau of Health for July shows that 666 cultures were examined for diphtheria bacilli, and that 426 specimens of suspected typhoid blood were examined. There were also examined 655 specimens of milk, and 100 specimens of sputum; 1,542.500 units of antitoxin were supplied, 10 disinfection tests were made, and 94 analyses were performed.

Increased Accommodations for Blockley.—Director Coplin of the Department of Public Health and Charities opened bids for beds, bedding, plumbing and other necessaries to accommodate 800 additional patients in the Philadelphia Hospital, money for which is to be taken from an appropriation of $126,000 made by council for fitting up the quarters in the Museum Building, to which about 800 paupers have been transferred. Repairs will also be made in the clinic room of the hospital and adjoining grounds.

Candy-Makers Held.—At the instance of B. H. Warren, State Dairy and Food Commissioner, twenty candy manufacturers of this city were arrested August 10 on the charge of selling impure candy and held in bail, ranging from $600 to $1,000. The firms were specifically charged with selling glucose, adulterated with sulphur dioxid and other injurious chemicals. Analysis of samples of grape sugar, made by Professor Lowoll, showed the material to contain an amount of sulphur dioxid exceeding the maximum quantity allowed by the German government in the preservation of fruits. It was concluded, therefore, that the substance was injurious to health.

Insane Patients Increase.—According to W. M. Late Coplin, director of the Department of Health and Charities, the most recent statistics show that the number of insane patients cared for by the city during the past year has increased 7 per cent. This, it is found, is about the same increase as is found in and reported by other cities of the first class. At present the Philadelphia General Hospital is caring for 1,600 insane patients. The average weekly cost per patient is $2.76; of this amount $1.17 is paid by the city and $1.59 by the state. The report shows an increase of 109 over the preceding year, and the total increase during the past decade, Dr. Coplin states, is 75 per cent. During the past 13 years the increase in this city is about the same as is found in other cities in proportion to its population.

Health Report.—The report of the Bureau of Health shows a decrease in the number of deaths from all causes, although the current week's figures are in excess of the same period last year. The total number of deaths for the week were 498, as compared with 519 reported last week, and 438 during the corresponding week of 1905. The principal causes of death were: Typhoid fever 15; whooping-cough, 12; tuberculosis, 57; cancer, 12; apoplexy, 10; heart disease, 31; acute respiratory diseases, 22; diarrhea, 107; cirrhosis of liver, 6; appendicitis, 4; Bright's disease, 26; premature birth, 16; debility, 22; old age, 5; heat, and sunstroke, 8; traumatism, 12; and marasmus, 9. There were 189 cases of contagious disease reported, with 19 deaths, as compared with 154 cases and 21 deaths the preceding week.

Hospital Report.—During July 76 patients were admitted to the Methodist Episcopal Hospital. In the dispensary there were treated the following cases: Medical, 57; surgical, 533; gynecological, 9; eye, 87; ear, 27; nose and throat, 37; skin, 38; orthopedic, 7; and pediatric, 23. The total number of patients treated was 818; total visits to the dispensary, 3,271; recent accidents, 363; patrol cases, 8; and ambulance calls, 22. ——During July 56 patients were admitted to the Mount Sinai Hospital, which with the 26 patients under treatment at the beginning of the month, made a total of 82 treated. There were 37 discharged cured, 5 improved, 4 not improved, 1 left without permission, and 5 died, leaving 30 patients under treatment at the end of the month. In the out-patient department 3,837 visits were paid, 1,407 of this number being new patients; 260 of the new patients were medical, 444 surgical, 144 eye, 75 nose, throat and ear, 237 children, 73 skin, 24 nervous diseases, and 48 gynecological; 466 cases were treated in the emergency ward, 39 being patrol cases and one ambulance case.

WISCONSIN.

Goes Free.—Dr. George T. Dawley, New London, who has been held under bonds on the charge of having performed a criminal operation, was discharged at the hearing August 1.

New Officers.—At a meeting of the Second District Medical Society, held at Kenosha, August 16, Dr. Wiliam A. Fulton, Burlington, was elected president; Drs. William R. Cheever, Kenosha, and George H. Young, Elkhorn, vice-presidents and Dr. J. Russell Eastman, Kenosha, secretary. The next meeting of the society will be held in Burlington.

Personal.—Dr. Alexander Kremers, house physician at the Johnstone Emergency Hospital, Milwaukee, has resigned, and Dr. Oscar Lotz has been appointed temporarily in his place.—— Dr. John A. Rice, Merton, is reported to be seriously ill at his home.——Dr. Gustav A. Hipke, Milwaukee, has been appointed obstetrician of the Milwaukee Maternity Hospital.——Dr. Horace E. Mann, Marinette, has disposed of his interest in the Menominee River Hospital.

Rodermund Again.—Dr. M. J. Rodermund, formerly of Appleton, who received considerable notoriety five years ago on account of his spectacular attempt to prove that smallpox was not contagious, has reopened his "campaign of education," and has written to the Health Commissioner of Milwaukee asking that the city take immediate steps to get the present health laws repealed so that vaccination and quarantine would no longer be required. The health commissioner, very properly, has referred his communication to the editor of the official journal of the Wisconsin State Medical Society.

GENERAL.

Association of Seaboard Air-Line Railway Surgeons.—More than a hundred members of this association attended the annual session in Savannah, July 13 and 14. The following officers were elected: President, Dr. William A. Monroe, Sanford, N. C.; vice-presidents, Drs. James G. Wallace, Dade City, Fla., Hillory M. Wilder, Charlotte, N. C., and Everard H. Richardson, Atlanta, Ga.; secretary and treasurer, Dr. Jarrett W. Palmer, Ailey, Ga. (reëlected), and member of the executive committee, Dr. John H. Miller, Cross Hill, S. C. The 1907 meeting will be held at the Jamestown (Va.) Exposition at a date to be decided later.

Back Numbers of The Journal Wanted.—The entire editions of The Journal for July 14 and July 21 have been exhausted, and it would be a favor if any who do not wish to preserve their copies will send them to the American Medical Association, 103 Dearborn avenue, Chicago. To those who wish it, we will send another copy in exchange or will refund 10 cents for each copy sent. The name and the address of the sender should be on the wrapper.

Ophthalmologists To Meet.—The eleventh annual meeting of the Academy of Ophthalmology and Oto-Laryngology will be held at the Oakland Hotel, St. Clair, Mich. (fifty miles from Detroit), August 30 to September 1, under the presidency of Dr. Casey A. Wood, Chicago. The subjects on the program include lingual thyroids, various uses of paraffin, the uselessness of the spray and the electric cautery for the rhinologist, how to obtain reliable replies by letter from patients, maxillary sinus operations, middle-ear suppuration, oral and laryngeal tuberculosis, cleft palate, tonsilectomy, massage and electricity in atrophy of the optic nerve, eyestrain and crime, cataract extraction, etc. Some addresses will be given by visitors from England who are in this country to attend the British Medical Association meeting this week. Dr. Eugene Smith, Detroit, is chairman of the committee on arrangements.

Mississippi Valley Meeting.—The next meeting of the Mississippi Valley Medical Association will be held at Hot Springs, Ark., November 6-8, under the presidency of Dr. J. H. Carstens, Detroit. The annual address in medicine will be delivered by Dr. Frank Parsons Norbury, Jacksonville, Ill., on "Clinical Psychology," and the address on surgery by Dr. Florus F. Lawrence, Columbus, Ohio, on "Surgical Principles and Theories." The preliminary program shows an excellent series of papers on a wide variety of practical subjects by men from all parts of the Mississippi Valley. Communications should be addressed to the secretary, Dr. Henry E. Tuley, 111 West Kentucky street, Louisville, Ky.

CANADA.

Personal.—Dr. George A. Peters, professor of surgery in the University of Toronto and colonel of the Toronto Light Horse Brigade, is in England, where his recently invented self-recording target is attracting much attention from military experts.

Novia Scotia Society Meeting.—The fifty-third annual meeting of the Medical Society of Nova Scotia was held at Lunenburg, July 3 and 4. The following officers were elected for the ensuing year: President, Dr. J. B. Black, M.P., Windsor; vice-president, Dr. J. A. Sponagle, Middleton; second vice-president, Dr. W. H. McDonald, Rose Bay; secretary-treasurer, Dr. J. R. Corston, Halifax.

British Columbia Association Meets.—The seventh annual meeting of the British Columbia Medical Association was held in New Westminister, August 1 and 2. The attendance was representative from all over the province. The following were the officers elected: President, Dr. R. L. Fraser, Victoria; vice-president, Dr. J. M. Pearson, Vancouver; secretary, Dr. R. Eden Walker, New Westminister; treasurer, Dr. J. D. Helmcken, Victoria. It was decided to meet in Victoria in 1907.

BRITISH MEDICAL ASSOCIATION.

(From Our Regular Correspondent.)

As we go to press a great gathering of medical men is taking place in Toronto. The annual meeting of the British Medical Association is this year held there. Mr. Guy Elliston, secretary of the British Medical Association, who arrived in that city August 10, felt that conditions indicated that there would be held one of the best meetings in the history of the organization. Certainly the indications were that it would largely outstrip the Montreal meeting, when the organization before met in Canada. Dr. Dawson Williams, editor of the *British Medical Journal*, accompanied by a staff of stenographers, arrived in Toronto last week to take charge of the daily publication of the proceedings. A very fine and elaborate exhibit of instruments, pharmaceuticals, etc., was arranged under charge of Dr. Arthur Jukes Johnson. This was in the main building of Toronto University in the Queen's Park, and here also were located the offices of the secretary, treasurer, etc. The general information bureau was also located on the main floor of the building near the entrance. The president of the association, Dr. George Cooper Franklin, will be the guest of Dr. Arthur Jukes Johnson while in Toronto, they having been college mates together many years ago. Sir Victor and Lady Horsley are to be the guests of Dr. H. A. Bruce. There is an unusually large attendance of physicians from the United States. The Journal has several official representatives there and will publish a full report. As we outlined a few weeks ago, physicians from the United States have almost the lion's share of representation in the scientific proceedings, as the program of nearly every section shows. This is an unusual opportunity, nevertheless, to taste the particular British flavor which the meeting will have, and to compare its various aspects with those of the medical gatherings on this side of the line.

FOREIGN.

Swedish Committee for Cancer Research.—The Swedish Medical Association (*Svenska Läkaresällskapet*) has appointed a committee to make a special study of all matters concerning cancer. Prof. J. Berg of Stockholm has been made chairman.

Prizes for Antimalarial Measures.—The Italian government has given prizes of $100 each to five large landed proprietors who have taken pains to have the dwellings of their laborers thoroughly screened against mosquitoes. The list includes Prince Borghese and Countess Lecca.

New Edition of the German Pharmacopeia.—The German authorities have undertaken the revision of the Pharmacopeia and appeal to all interested to offer suggestions for the new edition. Communications should be sent to President Bumm of the Imperial Board of Health, Berlin.

Physician Appointed Warden of Penitentiary in Germany.—The physician hitherto in charge of the insane department of the penitentiary at Münster, Dr. Pollitz, has recently been appointed warden of the penitentiary at Düsseldorf, the first time in Prussia, it is said, that a medical man has been appointed to a post of this kind.

French Congress of Surgery.—The nineteenth annual congress of the French Société de Chirurgie is to be held at Paris, opening October 1. Three questions have been appointed for discussion: "Surgery of the Nerve Trunks," "Ectopia of the Testicles and Its Complications," and "Routes and Means of Access to the Thorax from the Operative Standpoint."

Protection of Medical Experts in Judicial Debates.—A recent decision of a Paris court declares that medical experts summoned by the court are "citizens charged with a public service," and as such come under the special protection of the law. The court condemned to fifteen days in prison an individual convicted of insulting the experts in a recent case before the Court of Appeals.

Degrees Conferred at Greifswald.—On the occasion of its four hundred and fiftieth anniversary, the university of Greifswald conferred honorary medical degrees on Dr. W. W. Keen, Philadelphia; H. Snellen, the Utrecht ophthalmologist; and E. Roux, director of the Pasteur Institute, Paris. An honorary degree in the department of philosophy was also conferred on Krehl of Strasburg. Other details of the celebration were mentioned recently on page 519.

Course in Practical Disinfection.—The authorities in Bavaria are much gratified with the success of a special course of lectures and demonstrations given this summer at Erlangen for physicians and others interested in the practical application of disinfection for houses, halls, etc. Twenty-seven persons took the course, including three physicians. The lectures were delivered by Professors Heim and Weichardt. Kirstein's quiz "Guide for Disinfectors" was recommended as the manual for study.

Medical Advertising in a Rhine Province.—The medical society at Metz has exerted influence to such effect that the governor of the Province of Lothringen or Lorraine has issued a decree prohibiting all public advertising or recommending of treatment of patients without a personal examination, the so-called distance treatment, and also of all advertising of articles, measures, contrivances or methods designed to serve in the prevention, cure or mitigation of disease in man and animals. At the same time all advertisements relating to sexual matters are forbidden. The *Münch. med. Wochschr.* for August 7 gives the details of the new decree.

Italian Congress of Internal Medicine.—The sixteenth congress of internal medicine will be held at Rome in October. The subjects on the order of the day are "Arteriosclerosis," with addresses by Riva of Parma and Devoto of Pavia; "Affections Resembling Typhoid and Malta Fever," addresses by Gabbi of Messina and Lucatello of Padua, and "Arthritism," to be presented by Castellino of Naples. The committee of organization has issued an appeal to all the medical schools throughout the country asking them to inaugurate research along the lines of these suggested topics, hoping that a large and valuable national contribution may thus be secured for the study of these subjects.

Unification of Formulæ for Heroic Drugs.—The *Semaine Méd.* states that eight countries have agreed to accept uniform formulæ for the preparation of the heroic drugs and have notified the Belgian government to that effect. The list includes France, Germany, Great Britain, Holland, Switzerland, Greece and Luxemburg. The original resolution has been amended to allow the formulæ to be modified to keep pace with the progress of medical and pharmaceutical science. It is hoped that this modification will enable all the powers to accept the unified standards. Great Britain, in expressing its willingness to sign the agreement, stipulated that each of its colonial possessions is to sign, suggest modifications or reject, independently of the mother country.

German Police Supervision of Artificial Mineral Waters.—Recent regulations of the police district of Giessen, Grand Duchy of Hesse, Germany, according to the *Apotheker-Zeitung*, No. 59, 1906, provide for police supervision of the factory and springs from which artificial mineral waters are to be made, for official testing of the chemicals and apparatus, and new tests whenever changes or extensions of the business are to be made. Tests must be made at least once a year. No material injurious to health must be introduced into the water by the chemicals or apparatus, and no lead or untinned copper pipes or vessels shall be used. The cost of regular inspection is borne by the community, but extraordinary inspection and tests must be paid for by the manufacturers. The manufacturer can demand a free certificate of the examinations. The provisions of the regulations are enforced by a fine of $7.50.

Successors to Guyon and Brouardel at Paris.—J. C. F. Guyon, the famous French authority on the affections of the genito-urinary organs, was born on the Ile de la Réunion, in the Indian Ocean, in 1831, and has thus reached the age limit, and is compelled to resign his professorship. Besides publishing an atlas of affections of the urinary passages and various collections of clinical lectures, etc., he has long issued the *Annales d. mal. d. organes génito-urinaires*, a semi-monthly journal and review. He is to be succeeded by his former assistant, Joaquin Albarran, who is also a native of a tropical island, Cuba. His works on tumors of the bladder and tumors of the kidney have won prizes offered by the Académie des Sciences, etc.. and numerous articles have appeared from his pen since his first extensive work on the "Spontaneous Cure of Carcinoma," in 1883. Professor Thoinot, an eminent authority in legal medicine, has been appointed to the chair of this specialty left vacant by the death of Brouardel.

Experimental Inoculation of Man with Syphilis.—On page 1.779 of the last volume, June 9, 1906, THE JOURNAL described Metchnikoff's successful therapeutic prevention of syphilitic infection of monkeys and of a senior in the Paris Medical School, who volunteered for the test, all being inoculated with virulent human material. One hour afterward a salve of one part calomel to three parts lanolin was rubbed into the site of the inoculation for eight minutes. The control animals all developed syphilis, but no traces have appeared on the calomel-treated man or monkeys. The young man is a descendant of Maisonneuve, the famous French surgeon, 1809-1897, and bears the same name. His syphilis experiences form the subject of his thesis, recently handed in. The Paris papers have written up Maisonneuve and his thesis, reproducing his portrait and expatiating on his heroism. Metchnikoff has permitted this early publicity given to the matter. Professors Gaucher and Roger have taken a most decided public stand against generalizing from a single case, warning against the evils liable to follow if the public is lulled into a false security in regard to syphilitic infection before the fact of the possibility of therapeutic prophylaxis is scientifically and definitely established.

Quackery in Germany.—In the *Deutsche Revue* for July (abst. in *Apotheker-Zeitung*, No. 59, 1906), E. Roth gives an array of statistics regarding the growth of quackery in Germany which are very interesting. In 1879 there were in Prussia, with the exception of Berlin, 269 quacks; in 1887, 389; and in 1898, 1,200. In 1876 the proportion of quacks to physicians was 1 to 24; in 1898, 1 to 11. In the capital the proportion in 1879 was 1 to 34; in 1898, 1 to 5. In this enumeration the druggists, midwives, etc., are not included, some of whom give medical advice in an illegitimate way. The circles from which the quacks of Berlin are recruited, according to the statements of Beerwald, are also characteristic. Of 124 men who had announced their occupation as healer, 10 per cent. were laborers, 20 per cent. artisans, 46 per cent. came from occupations concerned with trade and commerce, and only 24 per cent could be credited with more than a primary education. In regard to the female quacks, 58 per cent. were formerly servant girls, 24 per cent. confectioners, 10 per cent. working women 5 per cent. nurses, and 2 per cent. had no occupation. While in the last twenty years the population of Berlin has increased about 61 per cent. quackery boasts a growth of 1.600 per cent. These figures should be taken to heart, should be communicated to others, and a reform inaugurated. The following figures also throw a sidelight on quackery. Of all those engaged in treating disease who carry on their business without medical training, not less than 16.6 per cent. had been previously prosecuted in the courts and fined, indeed, according to Magnus these figures rise in some districts of Berlin to 33 1/3 per cent. Quackery had for its support in 1903 already 38 periodicals, while the *Hygienische Blätter*, the official organ of the German Society for the Repression of Quackery was issued first in 1904, although this antiquackery journal also had certain predecessors. It was described in THE JOURNAL recently on page 453 of the last volume, with the aims and work of the society.

French Congress of Alienists and Neurologists.—The sixteenth annual congress was held at Lille during the first week in August. The official records are published in the *Archives de Neurologie*, but a rather full report has already appeared in the *Semaine Médicale* of August 8. The principal subjects discussed were "The Blood in the Insane," "The Senile Brain," "The Responsibility of Hysterics," "Relations Between Trauma and General Paralysis," and "The Grave Prognostic Significance of the Lympho-Polynucleosis in the Cerebrospinal Fluid in Acute Ascending Spinal Paralysis." Dide of Rennes and Régis of Bordeaux, after describing their cytologic, bacteriologic and experimental researches on the blood of insane patients, come to the conclusion that the function of defense on the part of the blood is materially disturbed in the insane, and in cases of acute or subacute confusional psychoses, such as dementia præcox, general paralysis, etc. This disturbance has considerable pathogenic importance, but it does not seem to be permanent in the majority of cases. It is possible that a severe and protracted intercurrent infection may rearouse this defensive function. They refer to the improvement and even the cures realized by certain physicians who have not hesitated to inject insane patients with attenuated virus for this purpose. Régis advises comparative study of the blood and urine as affording instructive data. Sabrazès of Bordeaux does not believe that nervous disorders affect the composition of the blood to any extent when they are once established. He is convinced that the nerve centers suffice for themselves in the defense against toxi-infections. The leucocytes do not interfere except in certain infections, such as suppurative meningitis, abscess, etc. Several members told of invariably negative findings in examination of the liver, nerve centers, meninges, and blood of syphilitics in the search for the *Treponema pallidum*. Léri remarked in regard to the senile brain that senility and old age are by no means synonymous terms. Also that different organs and different parts of the same organ in the same individual may show senile changes varying in degree. He styles senility "the final outcome of all the exogenous and endogenous intoxications which have marked the course of the individual's existence." Anglade regards the nerve cell and the neuroglia cell as sisters at war throughout life. Morbid conditions diminish the resisting powers of the nerve cells while they exalt the activity of the neuroglia cell. The former reacts by dying, the latter by proliferating. It is interesting to see how in the end the neuroglia finally triumphs, with the help of all the causes which make for senility. In the decadent brain one element seems endowed with inexhaustible vitality, and this is the neuroglia. Grasset of Montpellier called attention to the preservation of the ability for voluntary movements in patients with cerebral paralysis from sclerosis who drag their feet along the ground, apparently incapable of a better gait, tripping at the least irregularity in the ground. When ordered to lift their thigh up high they find that they can do it easily and well. By taking each joint separately in this way it can be seen that the power of voluntary movement is well retained. The trouble seems to be in the motor automatism, the involuntary mechanism, while the power of voluntary movements is retained to a surprising extent. This distinguishes such cases from those of spinal paraplegia and bilateral cerebral hemiplegia. Meige recommends training such patients in voluntary movements as an effectual means to improve their gait. The discussion of the responsibility of hysterics elicited the usual conflicting views.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Aug. 11, 1906.

Precautions Against the Spread of Diphtheria in Schools.

The London County Council has adopted a recommendation from the education committee to the effect that during the presence of diphtheria in any district the committee should be authorized to refuse to readmit to school children excluded on account of diphtheria or sore throat until they have obtained a medical certificate of freedom from infection based on a bacteriologic examination. This certificate will be accepted either from general practitioners or from health officers.

Industrial Accidents.

The annual report of the chief inspector of factories has just been issued. It shows that 100.609 accidents occurred during the year 1905, of which 1.063 proved fatal. The number of cases of lead poisoning was 592, approximately the same as in the previous year. There were 59 cases of anthrax, an increase of 9 on the previous year. The mortality rate among these was also increased, 16 being fatal, against 10 in 1904. Probably this was due to 7 of the anthrax cases being of the internal variety instead of 1 in the previous year.

Typhoid Fever Due to Shellfish.

Dr. Collingridge, health officer for the City of London, has reported an outbreak of typhoid fever due to cockles. On June 29 he received information of a report of an outbreak of typhoid fever in West Ham. In 52 cases reported 24 of the patients had eaten cockles a short time before the attack. The majority of the cockles were purchased from a dealer at Billingsgate, who had obtained his supplies from Leigh-on-Sea. Between June 28 and 30, six samples of cooked cockles obtained from this source were submitted to Dr. Klein, the city bacteriologist, who examined them to determine whether or not they contained living organisms, which, like the *Bacillus proteus*, *Bacillus coli communis* and streptococci are killed by temperatures of from 154 to 158 F., and whether or not they contained living bacilli of the Gärtner typhoid group. In cultures made from the stomach of the fish, colonies of *Bacillus coli communis* and of streptococci were found in every case, and in two cases also the *Bacillus proteus*. One sample yielded the *Bacillus Gärtner*, or a microbe indistinguishable from it. Dr. Klein concluded that none of the six samples had been sufficiently heated and that they were therefore unsafe. The dealers were at once notified to discontinue the sale of cockles from Leigh-on-Sea, and the fishermen to refrain from sending any more to the market. So long ago as December, 1903, cockles from Leigh-on-Sea were condemned on account of sewage contamination, and it was determined they should be allowed on the market only on the understanding that they were efficiently cooked (raised to a temperature of 212 F. for three and one-half minutes). As it is now found that the fishermen can not be trusted to take this precaution, the corporation of London has absolutely prohibited the sale of cockles from Leigh-on-Sea in the market. As previously reported in The Journal, both cockles and oysters obtained from the estuary of the Thames have given rise to outbreaks of typhoid fever. The whole estuary is polluted with sewage. The facts have been reported to the local government-board in support of the necessity for the long-delayed legislation for dealing with shellfish.

The Official Nomenclature of Disease.

The special committee of the Royal College of Physicians, appointed in 1902 to revise the nomenclature of disease, has presented its report, accompanied by copies of the fourth edition of the "Nomenclature of Diseases." The first edition was published in 1869 under the presidency of Sir Thomas Watson. The book is the standard work of reference authority on all questions of nomenclature, and physicians are directed by the registrar general to follow it in making returns as to the cause of death. The present edition has been ably edited by Dr. J. A. Omerod. The following are some of the most important changes: The enumeration of "Morbid States and Processes," which preceded the general classification of diseases, has been relegated to the appendix, since it is not intended to be used in making returns. The section entitled, "General Diseases," has been divided into four groups: (1) Infective diseases; (2) intoxications; (3) general diseases, not included in the two preceding groups; and (4) certain morbid conditions incident to various parts. In the first group pneumonia appears for the first time; formerly it appeared under local diseases. The true nature of epidemic diarrhea is now emphasized by terming it "infective enteritis." The use of the names, "membranous croup" and "membranous laryngitis" as synonyms for laryngeal diphtheria is forbidden, and the term croup is expunged from the list of diseases. The terms "febricula" and "simple continued fever" are omitted and their place is taken by "pyrexia of uncertain origin." The term "puerperal fever" is expunged. Pyemia, septicemia, or septic intoxication in the puerperium must be described as "puerperal pyemia," "puerperal fever," or "puerperal septic intoxication." Under the last term puerperal sparemia is to be included. The directions as regards vaccination in cases of smallpox are minute. In every case the presence or absence of marks of vaccination and their size, number and character are to be noted. Information is to be given as to whether the patient was (1) unvaccinated; (2) vaccinated in infancy only; (3) vaccinated after infancy; (4) vaccinated only after infection with smallpox; and (5) revaccinated. In returning various forms of tuberculosis the terms strumous and scrofulous are no longer to be used. The third group mentioned above includes anemia, cretinism, diabetes mellitus, exophthalmic goiter, gout, myxedema, purpura, rickets, and scurvy. In the fourth group are included malformations, the effects of parasites, poisons and new growths. In the classification of local diseases the use of names signifying symptoms is discouraged wherever it is possible to trace these to their causes. In particular it is recommended that diseases should be returned under such general causes names as "convulsions," "apoplexy," "paralysis," etc., only when their causes are unknown. When the latter are ascertained the case is to be registered under this head of the primary disease, the secondary affection also being specified. In order to facilitate the correct registration of deaths the usual custom is to forward to every physician free of cost a copy of the work.

Ophthalmological Congress at Oxford.

On July 23, an ophthalmological congress was opened at Oxford; it was organized by Mr. R. W. Doyne, the reader in ophthalmology in the university. Among the foreign guests were Professor Dor, Lyons; Dr. A. Darier, Paris; Dr. Snellen, Utrecht; Dr. A. Antonelli, Paris; Dr. Pergens, Maeyseck; and Dr. Patry, Geneva. Several interesting demonstrations were given. Professor Gotch performed experiments illustrating chromatic aberration of the eye. Dr. Henderson Smith explained the opsonic index. Mr. P. A. Adams showed recent methods of determining the coagulation time of blood in reference to ophthalmic disorders. Mr. M. S. Mayou showed a set of water color drawings illustrative of ocular bacteriology. Mr. J. T. Gradon showed microscopic specimens of several phases of ocular embryology. Dr. Darier demonstrated subconjunctival injections as used by him in the treatment of diseases of the eye. Professor Dor read a paper on "The Treatment of Graves' Disease with Thymus Gland," and Mr. Nettleship one on "Some Hereditary Diseases of the Eye." At the Eye Hospital a demonstration was given chiefly of "Family Diseases of the Eye."

Correspondence

Hay-Fever Treatment by Dunbar's Remedies (Pollantin).

St. Paul, Minn., Aug. 15, 1906.

To the Editor:—In The Journal, August 4, appears a letter from Dr. Ingals, in which he relates his experience with the Dunbar remedies, and an editorial soliciting correspondence on the subject. I have used pollantin to a considerable extent, and find that while benefit is secured in a limited number of cases, it is without result in the large majority. This failure of pollantin to cure cases uniformly is characteristic of all the other so-called remedies for hay fever that have been tried for decades. It certainly suggests that the empirical search for a specific should be abandoned in favor of investigation into the nature and location of the disease. May there not be some good reason for the failure of pollantin and other remedies in that they have failed to reach the real seat of the trouble? May not the success of the remedy in a few cases be due to the fact that it has by accident, rather than design, penetrated to the structures that are involved in the production of hay fever?

During the past three years I have devoted myself to investigation of the antrum of Highmore, and my experience warrants me in the statement that hay fever is of organic origin, with a basic lesion situated in the antra, and I believe that any treatment which is not directed to removing the inflammation of those cavities will fail to cure hay fever. Treatment of the antra for hay fever has been uniformly successful at my hands. Treatment of the antra in unmistakable hay fever has controlled the seizures in three or six days, and in those cases in which asthma was present, it disappeared simultaneously with the other symptoms. The findings following irrigation of the antrum with a boric-acid solution are: First, a secretion resembling buttermilk, with particles of white curdy substance; second, a serous fluid tinged with milk color. The disappearance of this secretion is followed by complete relief of the symptoms of hay fever, together with those of neurasthenia and asthma. The relation of this secretion to hay fever is demonstrated by the fact that it is not found in the antra of normal persons. This secretion is produced by a secretory inflammation induced in the antrum by the entrance of pollen, dust and other exciting causes of hay fever. My experience teaches me that those suffering from hay fever have a much larger ostium than normal persons, thus favoring the entrance of pollen and other substances. May we not explain the presence of hay fever in some and its absence in others by the varying size of the maxillary ostium? It is impossible in the limits of a letter to do more than to hint at the nature, locus morbi and treatment of the disease, but in a report now in preparation the pathologic, anatomic and therapeutic facts of antral disease will be presented. The object of this communication is solely to endeavor to explain why pollantin and other so-called remedies fail to cure the distressing conditions, and to suggest that we have heretofore been directing our efforts to the wrong anatomic structures.

Jacob E. Schadle.

LeMars, Iowa, Aug. 17, 1906.

To the Editor:—I have been very much interested in the recital of the various physicians' experiences in the use of pollantin. This is the third season I have used the serum in treating my hay-fever patients, and my experience with it has been very gratifying. I do not recall a single patient that has not been benefited by its use, and some have told me that they have enjoyed comparative freedom from attacks by using the serum and powder fairly regularly throughout the season. I very much deprecate the container used for the medicine. It is a great nuisance for the physician to be obliged to remove all the advertising matter, etc., before dispensing the serum. Can not these people be induced to put the medicine out in some other form? It seems to me that those containers were made especially for display on the drug-store counter. Some time since I had some correspondence with Fritchie Brothers on this very point, and it was, to say the least, amusing to read their very lame explanations of the reasons for so doing.

F. S. Clarke.

The Report of the Council on Medical Education.

To the Editor:—The recent report of the Council on Medical Education in The Journal A. M. A., June 16, 1906, page 1853, invites comment and suggestion. I am prompted to indulge in such comment because it seems to me that in this present time, full of great possibilities for advancement in medical education and practice, nothing will promote sure and rapid progress, and the avoidance of missteps, more certainly than a full and free discussion by all who are in any way related to, or interested in, the subject.

The decision of the Council to make its chief function that of co-ordinating the various forces at work among them, the medical schools and their associations, the literary colleges and medical examining boards, can not be too highly commended. It would have been a great mistake at this time to have attempted to force any arbitrary standards by drastic measures, such as the requirement that no physician, who failed to comply with certain standards, should be eligible for membership in the American Medical Association or in any of its constituent bodies. In this growing period of the Association the supreme effort should be to strengthen itself numerically by seeking the allegiance of every physician who is at all worthy of membership, and any action which would interfere with this movement would be unwise. In later years more radical measures and rigid standards may be indicated and may be possible of enforcement.

Most commendable also is the decision of the Council to carry on the work inaugurated by The Journal some years ago of gathering information in reference to the medical schools, the medical practice acts and state board rulings, and of the results of the examinations for licensure in the several states, etc. It seems to me, however, that in reference to the statistics of the examinations for licensure the fact should be again emphasized that these statistics must not be interpreted too literally, nor can the results be accepted as furnishing an accurate criterion of the relative merit of the several colleges. No one who is at all familiar with the character and the work of these schools can fail to discover that their relative rank, as they appear in the tables presented by the Council, bears little relation to their relative actual merit as teaching institutions. Some of the schools listed in the second group (showing from 10 to 20 per cent. of failures) or even the third group (over 20 per cent. of failures), are certainly not inferior to some of those which appear in Group I (having less than 10 per cent. of failures).

The reason for this is to be found in the wide discrepancy between the character of the examinations by the state boards—purely written tests as they are, almost without exception—and the practical, objective methods of teaching in vogue in the better medical colleges. For a quarter of a century now there has been a gradual and steadily growing departure fro the purely didactic and "cram" methods of instruction toward the methods which develop in the student the power to see, to hear, to feel, to do and to think, by the actual exercise of his faculties in the laboratory, the practical course and the clinic. While this movement has been going on, the character of the examinations has changed not at all, and they are at present so far removed from the modern methods of education as to afford an entirely inadequate and unfair test of the student's accomplishments or of his ability to practice his profession. It is difficult to understand why the examining boards have been so slow to realize this fact when one remembers that really effective and rational methods of examination for licensure have been practiced in all foreign countries for many years. Possibly the explanation is partly to be found in the personnel of the examining boards, which have been so largely composed of men with no experience or training as teachers or examiners. Certainly, it seems to me, that so long as the state board examinations are conducted on lines so antiquated and so foreign to the modern methods of education in the high-grade medical schools, just so long will the results of these examinations be no fair criterion of the merits of these schools or of their graduates.

The most important items of the report of the Council are the recommendations: 1, For an ideal standard of requirements, and 2, for a fixed, uniform medical curriculum. The ideal standard proposed by the committee comprises six years of study between graduation from a four-year high school and the reception of the degree of M.D. This arrangement proposes the addition of one year antecedent to one year subsequent to the present four-year medical curriculum, the antecedent year to be devoted to physics, chemistry, biology and German in preparation for the purely medical studies, while the closing year shall consist of practical work in a hospital or dispensary.

Few medical educators will dissent from the opinion that the time has come when a longer period than is now required must be given to preparation for the practice of medicine. The year of practical hospital training, already instituted by at least one American college, is of the utmost value, but not so indispensable as the provision for a more adequate preliminary training. Opinions will differ as to the sufficiency of one year of preparatory work beyond the high school, as requirement is already exacted in some colleges of two, three or four years, but all will welcome the addition of even one year of such work, provided, however, that it be done under such conditions and by such men as to insure its efficiency. And this is the point on which I wish to comment. To my mind the Council has made a grievous mistake in specifying that this preparatory year *may* be done in the medical school, or in a literary or scientific college. The failure to insist that these branches of general learning (for such physics, chemistry, biology and German surely are), must be taken in a college or university, where alone, with very rare exceptions in this country, they are properly taught, results in making this recommendation of the Council a step backward rather than forward, because it will tend still further to defer tha time, which I think we all realize should be the goal of ou desires, when every medical graduate will be a broadly cu tured, a college-bred man. What will be the actual working of this scheme to permit the medical school to add another year to its curriculum, and to exact another annual tuition fee from its students, may easily be foreseen by all who know the history of similar attempts of medical schools in former years to give instruction in non-medical branches. It is true that in Germany the gymnasium graduate enters the medical school with little or no scientific training—or did so until recently, but it is to be remembered that the situation in that country is wholly different from our own, for every medical school is an intimate and integral part of a university and the instruction in physics, chemistry and biology is in the hands of the university professors of these branches. The more strictly our own medical—purely professional—schools, devote themselves to the teaching of the purely medical branches, and the more completely they rely on institutions of general learning to do the preparatory work which belongs to them, the better will be the results secured. We may be sure that if the order for this preparatory year is promulgated by the examining boards as it is recommended by the Council, the very first institutions in the field with a blatant advertisement of their superior facilities for giving such instruction will be the most poorly equipped medical colleges, and those of the lowest standards. So far from operating to suppress the cheaper schools, the extinction of which is so greatly to be desired, the effect will be to give them an additional hold on their students and to enable them to secure fees for another year of relatively inexpensive instruction. It is very much to be hoped that before the action of the National Confederation of Examining Boards requiring this preparatory year goes into effect in 1910, it will be so amended as to specify that this work must be taken in a literary or scientific college. It is hard to understand why there should be so much eagerness on the part of some to eliminate the literary and scientific schools from our scheme of medical education. The medical schools and the medical profession need their coöperation quite as much as they need our support, and no ideal scheme of medical education can be constructed in this country which fails to include them as an integral part of the system. It is true that there are poor and spurious colleges, as there are cheap medical schools, though the proportion is not so large, but these can be easily discovered and designated. The council should reckon as one of its most important functions such an investigation and classification of the literary and scientific colleges.

I had intended to comment on the so-called ideal curriculum which has been proposed by the council, as well as on other fixed curricula which have been laid down, among them that of the Michigan State Board, and of the Association of American Medical Colleges, but I have already trespassed too much on your space for one communication and must reserve this item for a later discussion. John M. Dodson.

Wants to Arrest "Patent Medicine" Man.

Albion, Mich., Aug. 20, 1906.

To the Editor:—I want information of one W. Thompson, "the oil man." He was arrested here for practicing medicine without a license, gave bail for appearance at hearing, and did not appear. He has since been in Ypsilanti, Mich., and Findlay, Ohio, and was last heard from in Windsor, Ont. He travels with four comedians, sells from a wagon, and is a very smooth talker, of dark complexion, straight black hair, rather below medium height, about 40 years of age. He sells a soap, a blood medicine, and "Egyptian Oilio" (which is said to be colored gasoline), claims to represent a quarter-million dollar company, and has five diplomas. The sheriff is prepared to get him anywhere in the United States. If some physician who believes in protecting the public from swindling impostors will wire me on his appearance in any town we will be duly grateful and do the rest. George C. Hafford.

A Yellow Peril.—Under this head J. W. Croskey, in the *Medico-Chirurgical Journal*, May 20, includes trachoma which he says is more prevalent in Japan than in any other country, although it is also common in India and Egypt. In all these countries its spread is favored by religious observances and superstitions such as ablutions with use of a common towel. The danger is shown by the fact that the proportion of trachoma cases in immigrants at eastern ports is less than one in 1,000, while at western ports it rises to nearly one in 60. Greater care in examination of immigrants and more stringent measures to prevent the spread of this disease are needed.

Miscellany

Effect of Alkalies and Other Drugs on the Efficiency of Pepsin.—While the therapeutic inefficiency of pepsin without the simultaneous presence of an acid, preferably hydrochloric acid, has been emphatically stated often enough so that it should be thoroughly understood, this ferment is still frequently prescribed in mixtures containing no acid and in combination with substances which destroy the enzyme, so as to defeat the purpose for which it was intended. Many neutral salts, alkaloidal and other substances have been shown to have a retarding influence on the action of pepsin, while digestion with strong alkali destroys the enzyme altogether. J. F. Tocher has investigated the action of dilute alkalin solutions, as well as that of morphin and bismuth, substances which are often prescribed in mixtures with pepsin. He gives the following conclusions: 1. Solutions of sodium bicarbonate, sodium, potassium and ammonium hydrates when added to solutions of pepsin in the cold have an immediate inhibitory or destructive influence on pepsin, according to the concentration. In ordinary concentrations the effect is to destroy the enzyme immediately. 2. Dilute solutions of caustic alkali immediately destroy the activity of dilute solutions of pepsin. One millimeter (1 c.c.) of decinormal ammonia (0.0017 gm., NH_3) is sufficient to destroy the proteolytic power of 5 mgr. of pepsin in 5 mm. (5 c.c.) of water. That is, a 0.1 per cent. solution of pepsin with an alkalinity equal to 0.017 per cent. has no proteolytic power whatever. On acidifying and digesting, the enzyme is found to be destroyed. Pepsin should, therefore, never be prescribed with alkalies. 3. Carbonate of bismuth precipitates pepsin from aqueous solutions; subnitrate of bismuth does not. 4. Compound mixtures containing solution of bismuth, morphin, carmin, etc., should contain no pepsin, since the activity of the enzyme is much retarded by the morphin and is destroyed proportionately to the amount of alkali present in solution.

Ethyl Chlorid.—J. H. Chaldecott, in the *Clinical Journal* for August, discusses the uses and abuses of this comparatively new anesthetic. It is interesting and somewhat instructive to note that the adoption of this anesthetic in England owes much of its progress to the advertisement of somnoform and that some of the abuses of the drug have been due to the misleading and unduly favorable reports sent out by these manufacturers. Chaldecott, after extensive use of ethyl chlorid, adheres in the main to the conclusions which he published in 1904: 1. It is the best anesthetic known for single-dose cases, viz., those in which anesthesia is induced, the mask removed and the operation performed without any further administration. The statement still holds good for children, but in adults he prefers the nitrous oxid and ethyl chlorid mixture, which he regards as an ideal anesthetic in cases requiring an available anesthesia of from forty seconds to two minutes. 2. It is certainly worthy of an extensive trial in all minor operations. He does not see any advantage in ethyl chlorid after the first few minutes of anesthesia, it being more difficult to secure an even degree of narcosis than with ether or chloroform, and the after-effects of continued administration being practically identical with those of chloroform. 3. It is a safe and rapid means of inducing anesthesia as a preliminary to chloroform. This conclusion must be modified in the light of recent fatalities from the drug, and the ethyl chlorid ether sequence should be substituted for the gas-ether sequence only under circumstances which contraindicate the use of nitrous oxid. 4. Although its effects are transient, it is doubtless a powerful anesthetic and should be carefully administered and the patient properly prepared. The following objections to this anesthetic have been raised and are considered by Chaldecott: 1. Uncertainty of action. This has generally been due to the administration with too much air. 2. Rigidity. This has not been true in the author's experience. 3. After-effects. These have largely been due to imprudent use, and when the drug is properly administered they are very slight. 4. Danger to life. It must be admitted that although the proportion of fatal results is infinitesimal compared with the number of actual administrations, the drug offers an appreciable mortality and this fact ought to discourage its haphazard administration by dentists who are not qualified medical men and who have had no training in administration of anesthetics.

Influence of Pregnancy on Deafness.—Pregnancy, according to W. Milligan, in the *Journal of Laryngology, Rhinology and Otology* for June, may be the occasion of deafness due to vasomotor disturbances, which are transient, passing away after the termination of the pregnancy, or it may cause progressive changes due to the aggravation of pre-existing septic processes in the ear, which extend to the nerves of hearing in consequence of the diminished resistance produced by the toxemia of pregnancy. Simple catarrhal troubles may also be so aggravated that the deafness becomes more pronounced. These changes occurring in successive pregnancies present an unfavorable prognosis, since treatment, either local or general, seems to exercise little influence in retarding the advance of the disease. In consideration of these facts Milligan raises the following queries: (1) The advisability or otherwise of young women already the victims of advanced chronic middle-ear catarrh, purulent or non-purulent, or of otosclerosis, entering into matrimony; (2) if marriage has already taken place and the existing deafness has been materially increased by a first pregnancy, the advisability or otherwise of suggesting means to prevent any further pregnancy, and (3) if in a case of advanced deafness, where previous pregnancies have invariably increased the existing deafness, whether it is advisable or justifiable to induce premature labor. [Premature labor at the seventh to eighth month might be permissible in aggravated cases, but under no circumstances should an abortion necessitating the death of the fetus be considered justifiable for an affection entailing only inconvenience and no serious danger to the life of the mother.—Ed.]

An African Cure for Sleeping Sickness.—In a letter to the editor of the *Journal of the Royal Army Medical Corps*, Major Smith, R.A.M.C., states that eight years ago, while serving in the Sherbro and Mendi country in Sierra Leone, he noticed many people with scarred necks, and on making inquiry he was told that the glands had been removed by native doctors to prevent or to cure sleeping sickness. The natives informed him that at one time sleeping sickness had been rather frequent in the neighborhood, but that after the people found that removal of the "nuts" or "banga" was efficacious the disease had become rare. Whether the removal of the glands in the earlier stages of the malady could be of service in treatment it is impossible to say, but scientific medicine, Major Smith states, has confirmed the native opinion that enlargement of the glands is an early symptom. He offered about 50 cents a head for the names and whereabouts of patients with sleeping sickness, but was unable to find one till 1901. The man was a creole-negro who had been to the Congo two years previously. Subsequently Major Smith saw two or three cases of sleeping sickness in the colony, but all had a history of having been to Fernando Po, Congo, or elsewhere down the coast. The last case he saw was under Dr. W. Renner in the Colonial Hospital in 1904, and from this he successfully inoculated the common "mango monkey" and a rat with blood which had been for two hours or so in diluting fluid.

Gold Wire for Sutures in Hernia.—Siegmund Arkel, Milan (*Medicinische Klinik*, March 18, 1906), calls attention to the use of gold wire for sutures in hernia operations as practiced by Tansini of Pavia. The comparative antiseptic action of gold is shown by a series of experiments *in vitro* and on rabbits by Vecchi (*Il Morgagni*, Nos. 7 and 8, 1905) of which Arkel gives an abstract. Tansini has used this material in 360 hernia operations without a single case of early or late suppuration, and the patients were able to leave the bed by the seventh day. Like results were obtained by Professor Titone at Palermo in 25 cases, and by the surgeons Crosti and Rossi in the general hospital of Milan, in 14 and 40 operations, respectively, in the same rooms and under the same conditions as operations in which silk or catgut had been used and followed by infection. The cost of the gold sutures is not prohibitive, as 50 cm. of the suture weighed only 12 centigrams, and 120 centigrams of gold only costs five lire (about 95 cents). The slightly greater cost over silk or catgut is not worth considering when one takes into account the durability and the lessened danger of infection from handling, etc.

Marriages

Frank M. Hagans, M.D., to Miss Maud Mangas, both of Lincoln, Ill., recently.

James A. McCracken, M.D., to Miss Mary Snyder, both of Kane, Pa., August 8.

John R. Murnan, M.D., to Miss Edith Kercheval, both of Covington, Ky., August 14.

Francis J. Jones, M.D., Providence, R. I., to Miss Alice M. Kelley of Boston, August 8.

V. D. Farmer, M.D., Parma, Mich., to Miss Grace Dutcher of Jackson, Mich., August 14.

Patrick J. Sullivan, M.D., to Miss Malvina Moran, both of Muskegon, Mich., August 8.

Joseph W. Jauch, M.D., to Mrs. Mary A. Hotchkiss, both of Los Angeles, Cal., August 7.

Kimsey C. Evans, M.D., Edgerton, Ind., to Miss Nellie Brady of Fort Wayne, Ind., August 4.

W. Frank Bell, M.D., Plain Dealing, La., to Miss Maude Mosby, at Easton, Md., August 8.

Stanley Castle, M.D., Springfield, Ill., to Miss Elsie Mary McDowell of Chicago, August 14.

James Christianson, M.D., Alden, Minn., to Miss Maud Brackney, at Washta, Iowa, August 15.

Norman Charles Bledsoe, M.D., Bisbee, Ariz., to Miss Marriet Gage of Los Angeles, Cal., August 9.

William H. Taylor, M.D., Philadelphia, to Miss Anna Evalynn Bullock of New York City, August 1.

Charles D. Wall, M.D., Chicago, to Miss Jessie D. Boone of Nashotah, Wis., at Davenport, Iowa, July 18.

John A. English Eyster, M.D., Baltimore, to Miss Mary Elizabeth Adams, at Middleburg, Va., August 8.

Harold W. Baker, M.D., Worthington, Minn., to Mrs. Maxwell Stevenson of New York City, in Worthington recently.

Deaths

James Brown McCaw, M.D. New York University, New York City, 1844; said to have been oldest physician of Richmond, Va.; professor of chemistry in the Medical College of Virginia, 1865, and later professor of practice of medicine, and for twelve years dean of the college and, at the time of his death, chairman of the board of visitors of the institution; a surgeon in the Confederate service during the Civil War, and in charge of the Chimbarazo Hospital, Richmond, in which were treated more than 76,000 patients during the war; editor of the *Virginia Medical Journal* from 1853 to 1861 and of the *Confederate States Medical and Surgical Journal* from 1864 to 1865; a charter member, one of the founders, and some time president of the Medical Society of Virginia, and some time president of the Academy of Medicine and Surgery, Richmond; president of the Richmond Eye and Ear Infirmary; who on his retirement from practice in 1901 was tendered a banquet at which he was presented with a handsome silver loving cup, died at the home of his son-in-law in Richmond, August 13, from senile debility, aged 83. Of six surviving children, two sons, Dr. David McCaw of Richmond and Major Walter D. McCaw, surgeon, U. S. Army (at present librarian and officer in charge of the library of the Surgeon-General's office, having succeeded the late Major Walter Reed in this position in 1903), are members of the medical profession representing the fifth generation of a remarkable line of Virginia physicians.

Charles Stockton Gauntt, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1844; the oldest alumnus of the University of Pennsylvania; after graduation a professor at Girard College; later he became a member of the faculty of the Jefferson Medical College; a surgeon during the Civil War, and connected at different times with many institutions as medical instructor, died at his home in Philadelphia, August 16, aged 83 years.

Daniel S. Ellis, M.D. College of Physicians and Surgeons, Baltimore, 1870; a member of the Medical Society of Virginia, and surgeon to the Randolph-Macon College, Ashland, Vt., was drowned while crossing a swollen creek near home in Ashland, Ill., in answer to a professional call, August 12, aged 52.

Charles Edwin Jakeway, M.D. Toronto University Medical Faculty, 1871; died from asphyxiation at his home in Stanaer, Ont., March 1. While getting hay for his horse at night his lantern exploded, igniting the hay and straw in the loft and smothering him.

J. W. Ferguson, M.D. University of Louisville, Medical Department, 1889; a member of the American Medical Association, and a well-known practitioner of Bourbon County, Ky., died at his home near Shawham, August 9, from malignant disease, aged 49.

W. A. Goode, M.D. Atlanta (Ga.) Medical College, 1890; a member of the North Carolina Legislature, in 1903, from Cleveland County, died at his home in Shelby, N. C., August 3, after an illness of several weeks, from typhoid fever and nephritis.

Charles Albert Cochrane, M.D. Medical School of Maine at Bowdoin College, Brunswick 1856; a member of the Maine Medical Association, died at his home in Winthrop, Maine, from angina pectoris, after an illness of a month, aged 73.

John Onins Pierce, M.D. Pennsylvania University of Medicine and Surgery, Philadelphia, 1870; a veteran of the Civil War, died at his home in Milford, Del., July 11, from paresis, after an illness of more than twelve years, aged 63.

William E. Chamberlin, M.D. Charity Hospital Medical College, Cleveland, 1870; a veteran of the Civil War, died at his home in Akron, Ohio, August 11, from cerebral hemorrhage, after an illness of seven weeks, aged 65.

Felix Maslowsky, M.D. Hospital Medical College Louisville, 1875; a member of the Spencer County (Ind.) Medical Society, died at his home in Mariah Hill, April 6, from dropsy, after an illness of two months, aged 61.

Melville B. Estes, M.D. University of California Medical Department, San Francisco, 1888; died at his home in Vallejo, July 9, from lung disease, aggravated by shock due to the San Francisco earthquake, aged 47.

Samuel Ramsey, M.D. Cleveland Medical College, 1846; a veteran of the Mexican War, died at his home in Seattle, Wash., May 12, from senile debility, after an invalidism of four years, aged 81.

Charles Tylden Whaland, M.D. Maryland Medical College, Baltimore, 1905; of Chestertown, Md., died in the Maryland General Hospital, Baltimore, August 14, from spinal meningitis, aged 22.

William H. Davis, M.D. Medical Department of Washington University, St. Louis, 1878; of Bethany, Ill., president of the school board of that town, died in St. Louis, Mo., August 3, aged 51.

Jerome W. Flanders, M.D. Miami Medical College, Cincinnati, 1868; a member of the Jefferson County Council, died suddenly at his home in Dupont, Ind., from heart disease, August 11, aged 59.

William Jacoby, M.D. Medical Department of Western Reserve University, Cleveland, 1868; of Vernon Center, Minn., died May 31, in St. Joseph's Hospital, Mankato, Minn., aged 88.

Robert Joseph Brevard, M.D. New York University, New York City, 1872; twice mayor of Charlotte, died at his home in Charlotte, N. C., after an illness of several weeks, aged 57.

James Brown Combs, M.D. Medical College, Cincinnati, 1851; died at the home of his daughter in Washington, Iowa, recently, after a short illness, from cerebral hemorrhage, aged 81.

Lorenzo D. Bartlett, M.D. Castleton (Vt.) Medical College, 1862; died at his home in Keokuk, Iowa, August 14, from cerebral hemorrhage, after an illness of four days, aged 81.

Howard Graham Wetmore, M.D. College of Physicians and Surgeons in the City of New York, 1879; died at his home in High View, N. Y., April 27.

William H. Kesla, M.D. College of Physicians and Surgeons, Baltimore, 1896; died at his home in Austin, Pa., in June, from tuberculosis, aged about 35.

Lot S. Pennington, M.D. New York, 1837; died at his home in Sterling, Ill., July 31, from senile debility, after an illness of five years, aged 93.

Albert S. Hazard, M.D. State University of Iowa, College of Medicine, Iowa City, 1888; died at his home in La Vita, Colo., June 12.

Alma L. Rowe, M.D. Northwestern University Women's Medical School, Chicago, 1893; died at her home in Forest, Miss., May 27.

R. L. Cooper, M.D. Jefferson Medical College, Philadelphia, 1852; died at his home in Shelbina, Mo., August 3, aged 80.

David L. Delk, M.D. Chattanooga (Tenn.) Medical College, 1897; died at his home in Oakdale, Tenn., August 12.

DEATH ABROAD.

A. Vincent, M.D., professor of hygiene and president of the cantonal board of health, died at Geneva, July 23. He recently served as vice-president of the international conference for revision of the Geneva Convention.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

THE PHYSICIAN'S LIBRARY AND THE FILING OF CLIPPINGS FROM JOURNALS.

Seneca, N. C., July 23, 1906.

To the Editor:—The editorial in The Journal, June 2, 1906, page 1698, regarding the use of our public libraries by physicians remote from the centers of medical education was timely and worthy of more than passing notice. I believe, however, that you can render the rank and file of the profession an equal service by suggesting the methods of greatest value in searching out and using the material we have at our own door— for instance, suggestions as to purchasing the best books and building one's own library. Again, if you could help the average physician to grasp a tithe of the knowledge which comes almost daily to his desk in the periodicals of more or less value you would render him a service. It is impossible to have all these numerous journals bound as a public library may do, and yet it is often necessary to refer to them. I have found that the average physician has no system whatever to aid him in quickly referring to a journal article a few months or a few years old. If you, or any one else, can furnish a tried and true method for a busy practitioner you will earn his lasting gratitude.

E. A. Hines.

Answer.—The standard text-books are landmarks, so to speak, of the state of medical science at the time of their publication. Unfortunately, however, in many departments of medicine they change too rapidly in successive editions, and the up-to-date physician, if he depends on them, is subjected to considerable expense in purchasing the latest and best revised editions. It is only through medical journals that one can keep accurately in step with the progressive science of medicine, and a file of one or two of the leading weeklies, containing, as they nowadays do, not only original articles summarizing the facts known on their subjects, but also abstracts and summaries of the current medical literature of the day, and all elaborately indexed for each volume, is almost indispensable in the physician's library. One can not, however, preserve all the periodical literature that comes to hand, though much of it is certainly deserving of preservation. In the numerous sample copies that every physician receives, there are often articles that he would like to have on hand for ready reference, and the best way for systematically preserving these is a classified series of clipping envelopes which can be improvised at a minimum of expense and very little trouble by any systematic man. If in addition to the clippings, a card index of articles and subjects in which one takes a special interest is kept, even if only on scratch-paper pads, little more will be required. We have known of elaborate papers, reasonably exhaustive in literary references, being prepared from just such memoranda, and there are probably many such. Of course, one can not trust to second-hand references in any really valuable work, though more of that is done than is often admitted, in Europe as well as in this country, as Virchow once pointed out. Such a card index, giving brief statements of the substance and points of interest in the articles referred to, will often be found very convenient. It is much better than trying to keep a commonplace book of the old style, as it is much more easily made without regard to time or place of working, and the cards or slips can be kept in any convenient drawer or box, or perhaps, as well, like the clippings, in labeled envelopes. Such notes can also be made at society meetings, and in libraries where pencil references are generally allowed, on the uniform size scratch-pads and filed away later with very little trouble. We believe that a simple system like this will be found as practical as any other and equally advantageous. We might add a word as to the usefulness of journal clubs. If several physicians residing near each other coöperate, each taking certain journals not subscribed for by the others, and exchanging among themselves, each keeping and binding those for which he subscribes, a considerable widening of the field of reading and note-taking can be accomplished.

MICROSCOPES.

NEAL, KAN., Aug. 11, 1906.

To the Editor:—Can you recommend any make of microscope that is not too expensive and yet which can be relied on for histology and bacteriology work? Are American microscopes as good as foreign?

B. L. HALE, M.D.

ANSWER.—American microscopes—Bausch & Lomb and Spencer—are as good as the more common foreign makes, among which the Leitz microscope is probably most widely used in this country. Bausch & Lomb *sell microscopes in Europe*, especially France. The best microscope, and also the most expensive, is the Zeiss, which is in great favor with investigators. Any one of the following microscopes will answer fully for the practitioner: Zeiss, Bausch & Lomb, Leitz, Spencer, Reichert. With ordinary care and in a temperate climate a new microscope of any of these makes should last at the very least twenty-five years with only minor repairs. If bought from a reliable agent, so that no fraud of any kind is practiced, which is very rarely possible, such a microscope can be relied on absolutely for histologic and bacteriologic work, provided, *of course, that an adequate equipment of objectives* is included. Three objectives and two eye-pieces with substage condensers and diaphragm are requisite for satisfactory work in clinical microscopy. Without the oil immersion objective many bacteria are seen only with difficulty, and two dry objectives, one low and one high power, are essential. The Bausch & Lomb microscope BBa is gotten up especially for the practitioner and has the lenses, etc. mentioned. It sells for $75.00 net. Leitz and Spencer have similar instruments, the Spencer at the same price, we believe, as the Bausch & Lomb, the Leitz being a little higher. The Zeiss comes at least 50 per cent. higher. We have given details so freely because the microscope is probably the most expensive single instrument that the practitioner must have and use in order to do himself and his patients justice, and some physicians in starting out may possibly postpone purchasing the microscope because of the impression that it is more expensive and more risky to buy than really is the case. To the modern progressive physician the microscope is as necessary as the stethoscope—and many think they must have various accessories that run into money, but while these may be advantageous, they are not absolutely necessary to enable one to do ordinary clinical work.

DOSAGE FOR INFANTS.

NEAL, KAN., Aug. 13, 1906.

To the Editor:—I notice that in THE JOURNAL, Aug. 11, page 456, some one asks about dosage for infants under one year. My rule is this: Ascertain the weight of the baby and taking 150 pounds as the average weight of an adult, use the child's weight for the numerator and an average adult's weight for the denominator, thus: child's weight, 15 pounds; adult, 150; we have 15/150 = 1/10 *of an adult dose.*

B. L. HALE.

MCCAMMON, IDAHO, Aug. 16, 1906.

To the Editor:—In all scientific works on animals the weight of the animal is considered in connection with the dose. I believe in following the same rule in regard to human beings. It is not natural to suppose a man weighing 95 pounds should be given the same dose as one who weighs twice as much; or a large strong child should be given the same dose as a small one, even though they be the same age. Yet this is frequently done when a dose is figured according to Young's rule. I usually consider that the medium dose of a drug is intended for an adult weighing 150 pounds and vary according to the percentage of that weight. Of course one must consider whether a slight or a strong action is required, and must remember the varying effects of certain drugs on children.

J. W. ROBINSON, M.D.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ending August 18, 1906:

Appel, D. M., deputy surgeon-general, detailed for duty as member of examining board for promotion or advancement of medical officers, Army General Hospital, Presidio of San Francisco, Cal., during the temporary absence of Lieut.-Col. George H. Torney, deputy-surgeon-general.

Reed, Howard A., asst.-surgeon, relieved from temporary duty in the Department of California, and will report at once to medical superintendent, Army Transport Service, San Francisco, Cal., for duty on the transport *Logan*.

Smith, Lloyd L., asst. surgeon, relieved from duty as surgeon, U. S. A., transport *Logan*, and ordered to West Point, N. Y., for duty.

Banister, J. M., deputy-surgeon-general, left Fort Riley, Kans., on 30 days sick leave of absence.

Clayton, J. B., asst.-surgeon, arrived at Camp of Instruction, Fort Riley, Kans.

Usher, F. M. C., asst.-surgeon, left Fort Brady, Mich., en route to Camp of *Instruction, Fort Benjamin Harrison*, Ind.

Woodson, R. S., surgeon, left Fort McDowell, Cal., en route to Camp of Instruction, American Lake, Wash.

Purnell, H. S., asst.-surgeon, left Camp of Instruction, Islay, Wyo., on leave of absence for 30 days.

Kirby-Smith, R. M., asst.-surgeon, upon arrival at San Francisco, Cal., will report for duty at the Army General Hospital, Presidio of San Francisco, Cal.

Woodall, William P., asst.-surgeon, relieved from duty at Army General Hospital, San Francisco, Cal., and ordered to Camp Mabry, Tex., for duty. Upon the abandoment of Camp Mabry to proceed to Fort Clark, Tex., for duty.

Miller, E. W., asst.-surgeon, relieved from duty at Camp Mabry, Austin, Tex., and from duty at Fort Clark, Tex., *and ordered to* Fort Riley, Kans., for duty.

O'Connor, R. P., asst.-surgeon, relieved from duty at Army General Hospital, Presidio of San Francisco, Cal., and ordered to Fort Leavenworth, Kans., for duty.

Buck, Carroll D., asst.-surgeon, relieved from duty at Fort Leavenworth, Kans., and ordered to the Army General Hospital, Presidio, San Francisco, Cal., for duty.

Stedman, C. J., asst.-surgeon, upon arrival at Seattle, Wash., will proceed to Camp of Instruction, American Lake, Wash., for duty. Upon abandonment of camp, ordered to Fort Stevens, Ore., for duty.

Connor, C. H., asst.-surgeon, relieved from duty at Fort Stevens, Ore., and ordered to the Army General Hospital, Presidio, San Francisco, Cal., for duty.

Hall, James F., asst.-surgeon, relieved from duty at Army General Hospital, Presidio, San Francisco, Cal., and ordered to Fort Flagler, Wash., for duty.

Persons, E. E., asst.-surgeon, relieved from duty at Fort Flagler Wash., and ordered to take first available transport sailing from San Francisco, Cal., to Manila, and upon arrival at the last named place to report in person to the commanding general, Philippines Division, for assignment to duty.

Bosley, John R., asst.-surgeon, upon arrival at Seattle, Wash., will proceed to Jefferson Barracks, Mo., for station and duty.

Lewis, W. F., asst.-surgeon, so much of par. 22, S. O. 282, War Department, Dec. 5, 1905, as details him for examiner of recruits is revoked.

Scott, George H., asst.-surgeon, now on leave at Denver, Colo., will proceed to Camp of Instruction, at the target and maneuver reservation, near Fort D. A. Russell, Wyo., for duty. Upon completion of which he will return to Denver, Colo. and resume his leave.

Murtagh, John A., asst.-surgeon, detail as examiner of recruits, San Francisco, Cal., is revoked.

Hartsock, F. M., asst.-surgeon, detail as examiner of recruits, New York City, is revoked.

Jones, Percy L., asst.-surgeon, detail as examiner of recruits, Portland, Me., is revoked.

Truby, Willard F., asst.-surgeon, left Fort Niagara, N. Y., with 3d Batt., 12th Inf., en route to Mount Gretna, Pa., for duty at Camp of Instruction.

Brechemin, Louis Jr., asst.-surgeon, arrived at Camp Tacoma, Murray, Wash., for duty.

Davidson, W. T., asst.-surgeon, arrived at Camp Tacoma, Murray, Wash., for duty.

Ireland, M. W., surgeon, left Washington, D. C., en route to the Army General Hospital, Presidio of San Francisco, Cal., on temporary duty.

Bartlett, C. J., asst.-surgeon, arrived at Camp Tacoma, American Lake, Wash., for duty.

Devereux, J. R., asst.-surgeon, relieved from duty at Fort Logan, Colo., and ordered to Army General Hospital, Washington Barracks, Washington, D. C., for duty.

Koerper, C. E., asst.-surgeon, relieved from duty at Army General Hospital, Washington Barracks, Washington, D. C., and ordered to Fort D. A. Russell, Wyo., for duty.

Howard, Deane C., asst.-surgeon, granted 20 days leave of absence.

Smith, Lloyd L., asst.-surgeon, granted 5 days leave of absence.

Kelly, John P., contract surgeon, reports arrival at Fort Miley, Cal., for temporary duty.

Chase, A. M., contract surgeon, reports at Camp of Instruction, Austin, Tex., for duty.

Tuttle, George B., contract surgeon, returned to Fort Columbia, Wash., from leave of absence.

Slayter, John T. H., contract surgeon, relieved from duty in the Philippines Division, *to take effect about Oct. 10, 1906, and upon* arrival at San Francisco, Cal., to report to the Military Secretary of the Army, for further orders.

Hammond, William G., dental surgeon, reports arrival at Fort Logan, Colo., for duty.

Richardson, George H., contract surgeon, when his services are no longer required on transport *Buford, ordered to proceed* to San Francisco, Cal., and report in person to the commanding general, Department of California, for assignment to duty.

Jenkins, Frederic E., contract surgeon, *ordered to proceed* from Hancock, Md., to San Francisco, Cal., and take transport to sail from the latter place on or about Sept. 5, 1906, for the Philippine Islands, and upon arrival at *Manila to report in person* to commanding general, Philippines Division, for assignment to duty.

Davis, Oscar F., contract surgeon, granted leave of absence for three months, to take effect upon being relieved from duty at Fort Des Moines, Iowa.

Reagles, James, contract surgeon, reports his arrival at Fort Keogh, Mont.

Miller, William G., contract surgeon, upon arrival at San Francisco, Cal., ordered to proceed to Fort D. A. Russell, Wyo., for duty.

McCallum, Francis M., contract surgeon, upon being relieved at Fort D. A. Russell, Wyo., by Contract Surgeon Miller, ordered to proceed to Camp McKinley, Honolulu H. I., for duty.

Treuholtz, Clarence A., contract surgeon, ordered from General Hospital, Fort Bayard, N. Mex., to Fort Apache, Ariz., for temporary duty.

Pinquard Joseph, contract surgeon, reports return to Fort Leavenworth, Kans, for duty.

Boak, S D, dental surgeon, returned from leave of absence to Columbus Barracks, Ohio for duty

Jordan, Edward H, contract surgeon, ordered to proceed from Denver, Colo, to San Francisco Cal, and take transport to sail from the latter place on or about Sept 5, 1906 for the Philippine Islands and upon arrival at Manila to report in person to the commanding general, Philippines Division, for assignment to duty

Merrick John N, contract surgeon, reports return to duty at Fort Missoula, Mont

Navy Changes

Changes in the Medical Corps, U. S Navy, for the two weeks ending Aug 11, 1906:

Longabaugh, I, acting asst surgeon, appointed acting asst surgeon from Aug 7, 1906

Jones, A McK, acting asst surgeon appointed acting asst surgeon from Aug 7, 1906

Smith H L acting asst surgeon, ordered to the Naval Hospital, Philadelphia

Moore, J M, surgeon, ordered to the *Puritan*

Parker, E G, surgeon, commissioned a surgeon in the Navy from March 24, 1906

Minter, J M, asst surgeon, appointed an asst surgeon in the Navy from Aug 1, 1906

Downey, J O asst surgeon, appointed an asst surgeon in the Navy from Aug 1, 1906

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non commissioner officers of the Public Health and Marine Hospital Service for the seven days ending Aug 15, 1906

Austin H W, surgeon, relieved from duty at Detroit, on arrival of Passed Asst-Surgeon Grubbs at that port, and directed to proceed to San Francisco relieving Surgeon H W Sawtelle and assuming command of the station at that port

Mead F W, surgeon, granted leave of absence for one month from August 15

White J H, surgeon, directed to proceed to Mobile, Ala, for special temporary duty, on completion of which, to rejoin station at New Orleans

Woodward, R M, surgeon detailed to represent the Service at the meeting of the British Medical Association at Toronto, Canada, August 21 to 24

Rosenau, M J, passed asst surgeon, granted leave of absence for one day, August 11, under paragraph 189 of the Regulations

Lavinder, C H, passed asst surgeon, granted leave of absence for twenty eight days from August 11

Grubbs, S B passed asst surgeon, on expiration of present leave of absence relieved from duty at Cleveland Ohio, and directed to proceed to Detroit and assume temporary command of the Service at that port

Anderson, J F, passed asst surgeon, granted leave of absence for five days from August 7, on account of sickness

Duffy, F, acting asst surgeon granted leave of absence for seven days, from August 14

Dunn, James, acting asst surgeon, granted leave of absence for seven days, from August 6, under paragraph 210, of the Regulations

O Reilly, W. J, acting asst surgeon, granted leave of absence for two days, from August 28

Ranson S A, acting asst surgeon, granted leave of absence for thirty days, from September 24, and excused for a further period of sixty days, from October 24

Savage W L, acting asst surgeon granted leave of absence for thirty days from August 11

Sill, R H, acting asst surgeon, granted leave of absence for fifteen days, from August 17

Richardson S W, pharmacist, granted leave of absence for seven days from August 18 under paragraph 210 of the Regulations

Scott, E B, pharmacist granted leave of absence for four days from July 26 on account of sickness

Scott E B pharmacist granted leave of absence for three days, from July 31 on account of sickness

BOARD CONVENED

Board convened to meet at Cebu Philippine Islands for the purpose of examining Pharmacist C R McBride, to determine his fitness for promotion to the grade of Pharmacist of the Second Class Detail for the Board, Passed Asst Surgeon V E Heiser Chairman Passed Asst Surgeon Carroll Fox, Recorder August 13, 1906

Health Reports.

The following cases of smallpox yellow fever cholera and plague have been reported to the Surgeon General Public Health and Marine Hospital Service during the week ended August 17 1906

SMALLPOX—UNITED STATES

Illinois Galesburg July 28 August 4 2 cases
Louisiana New Orleans July 28 August 4 9 cases 2 deaths
Michigan Detroit, July 28 August 4, 2 cases
Missouri St Joseph July 28 August 4, 1 case
New Jersey Elizabeth, June 30 July 7, 1 case
New York New York August 4 11, 1 case
Pennsylvania Columbia, July 28 August 4 1 case
Texas Greenville, March 26 August 6 33 cases
Washington Spokane, July 1 31, 1 case
Wisconsin Appleton July 28 August 4 3 cases; Milwaukee, July 14 21, 1 case; August 4 11, 1 case

SMALLPOX—FOREIGN

Africa Cape Town June 30 July 7, 1 case
Argentina Buenos Ayres May 1 31 197 deaths
Brazil Pernambuco, June 15 30, 2 deaths
China: Hongkong June 9 30, 4 cases, 3 deaths; Shanghai, June 23 30, 1 case, 1 death
France: Paris, July 14 21, 8 cases
Great Britain: Liverpool, July 21 28, 4 cases
Chile: Antofagasta, June 21-July 5, 33 cases, 3 deaths
India: Bombay, June 26 July 10, 7 deaths, Calcutta, June 23 30, 19 deaths; Madras, June 30 July 6, 4 deaths; Rangoon, June 23 30, 4 deaths
Italy: General, July 12 19, 4 cases
Russia. Moscow, June 30 July 21, 11 cases, 7 deaths; Odessa, July 14 21, 5 cases, 2 deaths, St Petersburg, June 30 July 7, 6 cases, 2 deaths
Siberia: Vladivostok, June 14 28, 2 cases

YELLOW FEVER.

Cuba: Habana, August 15, 1 case
Mexico. Merida, July 22 28, 12 cases, 7 deaths; Tierra Blanca, August 12, 1 case; Vera Cruz, July 22 28, 1 case, 1 death (imported from Merida).

CHOLERA

Philippine Islands: Manila, June 23 30, 41 cases, 40 deaths; Provinces, June 23 30, 117 cases, 71 deaths
India: Bombay, June 26 July 10, 78 deaths, Calcutta, June 23 30 28 deaths; Karachi, July 1 8, 1 case, 1 death; Madras, June 30 July 6, 17 deaths; Rangoon, June 23 30, 4 deaths

PLAGUE

Australia: Brisbane, June 20, 1 case 1 death, Sydney, June 23, 1 case, 1 death
Chile Antofagasta, June 21 July 5, 5 cases, 1 death
China: Hongkong, June 9 30, 112 cases, 93 deaths
India: General, June 23 30, 896 cases, 769 deaths; Bombay, June 26 July 10, 71 deaths Calcutta, June 23 30, 23 deaths; Karachi, July 1 8, 24 cases, 17 deaths; Rangoon, June 23 30, 137 deaths
Japan: Formosa, June 1 July 10, 671 cases, 640 deaths

Travel Notes

DISEASES AND HOSPITALS OF THE EAST COAST OF AFRICA.

NICHOLAS SENN, M.D.
Professor of Surgery in the University of Chicago; Professor and Head of the Surgical Department, Rush Medical College
CHICAGO.

Salisbury, Mashonaland, June 8, 1906.

GERMANY'S BATTLE WITH TROPICAL DISEASES IN EAST AFRICA.

(Concluded from page 532.)

TUBERCULOSIS.

No cases of tuberculosis have been seen among the natives living on the mountain plateaus in the interior. On the lowlands, and especially on the coast, where natives come most frequently in contact with foreigners, isolated cases of pulmonary tuberculosis are beginning to come to the notice of physicians, and I saw a few cases in the hospitals I visited. There is every reason to fear that this disease will become more and more prevalent, despite the efforts made to prevent its spread. The lung appears to be the organ pre-eminently predisposed to infection, as all the physicians whom I have met on the coast have never seen any cases of glandular, bone or joint tuberculosis, and among the thousands of natives that came under my observation I failed to find any of the remote results of these affections in the form of scars, kyphosis and ankylosis

RELAPSING FEVER AND SLEEPING DISEASE

This disease has no connection whatever with malarial infection It is a disease *per se*, caused by the bite of a tick found constantly in the huts of natives, more especially along the highways of inland trade and travel The traveler can protect himself against this disease by avoiding stopping-places along caravan routes and entering native huts and by sleeping in a tent at least twenty to fifty feet away from any possible sources of coming in contact with the tick, and by insisting that his servants do the same

The tsetse fly is the most formidable enemy of man and beast in East Africa The commission appointed by the imperial government of Germany is now engaged in throwing more light on the disease caused by infection with the parasite carried and transmitted by this fly.

One of the earliest accounts of tsetse fly and the disease caused by it was given by Dr. David Livingston, the intrepid explorer and devoted missionary, fifty years ago, when he explored the upper Zambesi region. It is interesting reading just now and I will quote from it: 'The tsetse fly, *Glossina* *morsitans*, is a little longer than the ordinary housefly and is nearly of the same color as the honey bee. The upper part of the body has three or four yellow bars across it; the wings project beyond this point considerably, and it is remarkably alert, avoiding most dextrously all attempts to capture it with the hand at common temperatures; in the cool of the mornings and evenings it is less agile. Its peculiar buzz when once heard can never be forgotten by the traveler. It is well known that the bite of this poisonous insect is certain death to the ox, horse and dog.

"The poison does not seem to be injected with a sting or by ova placed below the skin, for when one is allowed to feed freely on the hand it is seen to insert the middle prong of three portions, into which the proboscis divides, somewhat deeply into the true skin; it then draws it out a little way, and it assumes a crimson color as the mandibles come into brisk operation. The previously shrunken belly swells out, and if left undisturbed the fly quickly departs when it is full. A slight itching irritation follows, but not more than in the bite of a mosquito. In the ox this same bite produces no more immediate effects than in man. It does not startle him as the gadfly does, but a few days afterward the following symptoms supervene: The eye and nose begin to run, the coat shivers as if the animal were cold, a swelling appears under the jaw and sometimes at the navel; and, though the animal continues to graze, emaciation soon ensues, accompanied with a peculiar flaccidity of muscles, and proceeds unchecked until, perhaps, months afterward, purging comes on, and the animal, no longer able to graze, perishes in a state of extreme exhaustion. In the acute form the animal often perishes soon after the bite with staggering and blindness, as if the brain were affected by it."

He details the postmortem appearances as found in dead animals, from which he concludes the poison is in the blood. "The poison germ, contained in a bulb at the root of the proboscis, seems capable, although very minute in quantity, of reproducing itself, for the blood after death by tsetse is very small in quantity and scarcely stains the hands in dissecting." This was written half a century ago and much of it has been confirmed since by more extended and modern means of research.

F. Stuhlmann, of the Amani Institute in German East Africa, two hours by rail from Tanga, has written a classical article on the "Anatomy and Physiology of the Tsetse Fly." The amount of work done in obtaining the material for this article is simply stupendous and illustrates to perfection with what thoroughness the German scientists have undertaken the task assigned to them. He found the *Glossina fusca* more common at Amani than the *Glossina tachioroides* and *Glossina palpalis* of Uganda, and it is yet a question to be determined which one of the several varieties of tsetse fles is the most common cause of trypanosomiasis. He kept the flies for months in glass vessels covered with gauze and fed them, say every four or five days, by applying the gauze end of the glass to the skin of a heifer, so that the flies could sting the animal through the gauze cover. He studied the habits of the flies. When the fly alights on the skin it changes its place several times until it finds the right spot, when the puncture is quickly made and the suction is completed in from thirty to forty seconds. The sting feels like the prick of a needle, and the fly is full and withdraws the proboscis in one-half to three-quarters of a minute. He gives a most elaborate description of the proboscis and alimentary canal, which must be read in the original to be understood. In regard to the former he winds up by saying that it resembles that of the housefly in every particular, with the exception that the upper lip has a large, movable pair of labella, which in the ordinary fly are rudimentary. Until recently it was believed that the *Glossina morsitans* was the only cause of the sleeping disease that year after year has destroyed hundreds of herds of cattle and thousands of human beings. Koch is now of the opinion that the disease can also be communicated by the *Glossina fusca* and *Glossina pallidis*. However, further researches and observations are necessary to substantiate or to correct this view. Of the domestic animals only goats, sheep and fowls are immune to the tsetse-fly infection. Natives are much more susceptible to it than Europeans. So far the disease has proved uniformly fatal. It pursues an unusually chronic course, and the symptoms in many respects resemble those described by Livingston as he observed the disease in cattle. It begins as an acute affection, but passes into a chronic form, characterized by hebetude and somnolence, progressive anemia and emaciation. Professor Ollwig was the only physician on the coast that I met who had ever seen a case. Tsetse flies are very numerous in the neighborhood of Dar-es-Salaam, but evidently they do not carry the essential microbic cause of trypanosomiasis, probably because the wild buffalo, formerly so common here, has migrated further north in the direction of Lake Victoria Nyanza, a locality in which the sleeping disease is now most prevalent.

ANKYLSTOMIASIS.

This parasitic disease is extremely prevalent among the natives all along the East Coast of Africa, but Europeans are seldom affected with it. I saw a number of cases in every hospital I visited. Progressive anemia and emaciation are the constant results. Thymol in half-dram doses has so far been employed in its treatment, but the results have not been satisfactory, as relapses only too often follow an apparent cure in consequence of incomplete removal of the essential parasitic cause. Oil of eucalyptus, praised recently by a Dutch physician, is now on trial in the hospital for natives at Dar-es-Salaam. My traveling companion, Dr. L. L. Seaman, made a specialty of this disease in Porto Rico and is enthusiastic over the curative effects of beta-naphthol in half-dram doses, followed twelve hours later by a brisk saline cathartic. This remedy will be given a trial in the hospitals here.

BUBONIC PLAGUE.

This, one of the pests of the tropics, threatens German East Africa from the north. It had its origin in the interior of Africa about the source of the Nile, whence it spread to Uganda and finally reached the northern boundary of German East Africa, where two foci were established. The strict sanitary measures employed and the quarantine enforced to prevent its further spread will undoubtedly prove eminently successful.

APPENDICITIS.

After visiting the hospitals at Mombasa, Tanga and Dar-es-Salaam and conversing with the physicians, I learned that none of them had ever seen a case of appendicitis among the blacks, and most of them had lived on the coast from two to twelve years, and in the aggregate had examined thousands of cases. The relaxing effects of the climate, the notorious laziness of the people, but more especially the almost exclusive vegetable and fruit diet, go far to explain the almost complete immunity to the disease that afflicts so frequently Europeans and Americans and fills the case books and the operating rooms of our surgeons.

CARCINOMA.

From all the information I could gather from physicians on the East Coast of Africa and at Zanzibar, carcinoma is almost unknown as a disease of the blacks in the tropic region of Africa. On close inquiry I was able to find only two well-authenticated cases, one of carcinoma of the stomach at Dar-es-Salaam and the second a case of epithelioma of the lower lip, observed by Dr. Friedrichsen, of Zanzibar.

The diagnosis in the first case was confirmed at the operation performed, and in the second case by the clinical course of the disease, which was characterized by all the clinical symptoms of this disease from the beginning to the fatal termination. The radical operation recommended by the physician when the disease was still in an operable stage was refused, and it pursued its usual relentless course. It was this exemption from carcinoma of the natives living in the tropics and in the Arctic regions that led me to the conclusion that carcinoma is caused largely by unknown climatic and dietetic influences, for the international study of which I made a plea in one of the general sessions of the International Medical Congress at Lisbon.

(*To be continued.*)

36	37	38	39	40	41	42	43	44	45	46							
outh Carolina.	outh Dakota.	ennessee.	exas.	tah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.	Totals.	Registered on Credentials.	Examined—Passed.	Examined—Failed.	Percentage of Failures.	No. of States having Representatives.	Number.

88	Ensworth Medical College.—R.	.. ..	.. ..	.. ..
89	Barnes Medical College.—R.	.. ..	.. ..	.. ..
90	Marion Sims-Beaumont College of Medicine.—R.	0 1	.. ..	.. ..
91	St. Louis College of Physicians and Surgeons.—R.	.. ..	.. ..	.. ..
92	American Medical College.—E.	.. ..	.. ..	.. ..
93	Homeopathic Medical College of Missouri.—H.	.. ..	.. ..	.. ..
94	Medical Department, Washington University.—R.	.. ..	.. ..	.. ..
95	University of the State of Missouri.—R.	.. ..	.. ..	1
	NEBRASKA.			
96	University of Nebraska College of Medicine.—R.	.. ..	.. ..	.. ..
97	John A. Creighton Medical College.—R.	.. ..	.. ..	.. ..
98	Lincoln Medical College of Cotner University.—E.	.. ..	.. ..	.. ..
	NEW HAMPSHIRE.			
99	Dartmouth Medical College.—R.	.. ..	.. ..	.. ..
	NEW YORK.			
100	Albany Medical College.—R.	.. ..	.. ..	.. ..
101	College of Physicians and Surgeons.—R.	.. ..	.. ..	.. ..
102	Cornell University Medical College.—R.	.. ..	1 0	.. ..
103	Eclectic Medical College.—E.	.. ..	.. ..	.. 1
104	Long Island College Hospital.—R.	.. ..	.. ..	.. ..
105	New York Homeopathic Medical College and Hospital.—H.	.. ..	.. ..	.. ..
106	New York Medical College and Hospital for Women.—	.. ..	.. ..	.. ..
107	University and Bellevue Hospital Medical College.—R.	.. ..	.. ..	.. ..
108	Syracuse University College of Medicine.—R.	.. ..	.. ..	.. ..
109	University of Buffalo, Medical Department.—R.	.. ..	.. ..	.. ..
	NORTH CAROLINA.			
110	Leonard Medical School, Shaw University.—R.	.. ..	.. ..	.. ..
111	North Carolina Medical College.—R.	.. ..	.. ..	.. ..
112	Medical Department, University of North Carolina.—R.	.. ..	.. ..	.. ..
	OHIO.			
113	Western Reserve University Medical College.—R.	.. ..	.. ..	.. ..
114	Cleveland College of Physicians and Surgeons.—R.	.. ..	.. ..	.. ..
115	Cleveland Homeopathic Medical College.—H.	.. ..	.. ..	.. ..
116	Eclectic Medical Institute.—E.	.. ..	.. ..	.. 1
117	Medical College of Ohio.—R.	.. ..	.. ..	.. ..
118	Pulte Medical College.—H.	.. ..	.. ..	.. ..
119	Miami Medical College.—R.	.. ..	.. ..	.. ..
120	Ohio Medical University.—R.	.. ..	.. ..	.. ..
121	Starling Medical College.—R.	.. ..	1 1	1 0
122	Toledo Medical College.—R.	.. ..	.. ..	.. ..
	OREGON.			
123	University of Oregon, Medical Department.—R.	.. ..	.. ..	.. ..
124	Medical Department, Willamette University.—R.	.. ..	.. ..	.. ..
	PENNSYLVANIA.			
125	Temple College of Philadelphia, Dept. of Medicine.—R.	.. ..	.. ..	.. ..
126	University of Pennsylvania, Department of Medicine.—R.	.. ..	.. ..	.. ..
127	Hahnemann Medical College and Hospital.—H.	.. ..	.. ..	.. ..
128	Jefferson Medical College.—R.	.. ..	1 0	.. ..
129	Woman's Medical College of Pennsylvania.—R.	.. ..	.. ..	.. ..
130	Medico-Chirurgical College of Philadelphia.—R.	.. ..	.. ..	.. ..
131	Western Pennsylvania Medical College.—R.	.. ..	.. ..	.. ..
	SOUTH CAROLINA.			
132	Medical College of the State of South Carolina.—R.	.. ..	.. ..	.. ..
	TENNESSEE.			
133	Tennessee Medical College.—R.	.. ..	.. ..	.. ..
134	Knoxville Medical College.—R.	.. ..	.. ..	.. ..
135	Medical Department of University of Nashville.—R.	.. ..	.. ..	.. ..
136	Vanderbilt University Medical Department.—R.	1 0	1 0	.. ..
137	University of Tennessee, Medical Department.—R.	.. ..	.. ..	.. ..
138	Meharry Medical College.—R.	.. ..	.. ..	.. ..
139	Memphis Hospital Medical College.—R.	1 0	.. ..	1 0
140	University of the South.—R.	.. ..	.. ..	.. ..
141	Chattanooga National Medical College.—R.	.. ..	.. ..	.. ..
142	Chattanooga Medical College.—R.	.. ..	.. ..	.. ..
143	University of West Tennessee, Medical Department.—R.	.. ..	.. ..	.. ..
	TEXAS.			
144	Medical Department Fort Worth University.—R.	.. ..	.. ..	.. ..
145	University of Texas Department of Medicine.—R.	.. ..	1 0	.. ..
146	Baylor University College of Medicine.—R.	.. ..	.. ..	.. ..
147	Dallas Medical College.—R.	.. ..	.. ..	.. ..
148	Gate City Medical College, Texarkana.—R.	.. ..	.. ..	.. ..
149	Southwestern University Medical College, Dallas.—	.. ..	.. ..	.. ..
150	College of Physicians and Surgeons, Dallas.—R.	.. ..	.. ..	.. ..
	VERMONT.			
151	University of Vermont Medical Department.—R.	.. ..	.. ..	.. ..
	VIRGINIA.			
152	Medical College of Virginia.—R.	.. ..	.. ..	.. ..
153	University College of Medicine.—R.	.. ..	.. ..	.. ..
154	University of Virginia Department of Medicine.—R.	1 0	.. ..	.. ..
	WISCONSIN.			
155	Milwaukee Medical College.—R.	.. ..	.. ..	.. ..
156	Wisconsin College of Physicians and Surgeons.—R.	.. ..	.. ..	.. ..
157	Canadian Colleges	.. ..	.. ..	.. ..
158	Foreign	.. ..	0 1	.. ..
159	Miscellaneous Medical Colleges	.. ..	.. ..	.. ..
	Totals by States	15	12	9
	* Totals—Registered on Credentials or by Reciprocity	....	....	....
	Totals—Examined—Passed	10	9	8
	Totals—Examined—Failed	5	3	1
	Percentage of Failures	33.3	25.0	11.1
	Figures in italics shows those registered on credentials.			
	* Examination consists of an oral or written examination.	1	2	3
	† Report for October examination missing.			

....	....	....	....	86
3	0	0.	2	87
2	3	60.0	3	88
5	9	64.3	9	89
4	4	50.0	4	90
1	2	66.7	2	91
4	2	33.3	2	92
1	0	0.	1	93
7	3	30.0	9	94
6	1	14.3	1	95
5	0	0.	3	96
....	....	....	....	97
....	....	....	....	98
3	1	25.0	4	99
3	0	0.	2	100
18	0	0.	10	101
....	....	....	....	102
....	....	....	....	103
3	4	57.1	6	104
3	1	25.0	4	105
1	1	50.0	2	106
13	10	43.4	13	107
0	1	100.0	1	108
4	1	20.0	4	109
0	1	100.0	1	110
....	....	....	....	111
....	....	....	....	112
5	3	37.5	7	113
....	....	....	1	114
5	3	37.5	6	115
9	0	0.	7	116
8	5	38.4	8	117
2	3	60.0	3	118
3	1	25.0	3	119
6	1	14.3	4	120
5	5	50.0	8	121
2	0	0.	1	122
1	0	0.	1	123
1	0	0.	1	124
....	....	....	....	125
20	5	20.0	14	126
1	1	50.0	2	127
17	5	22.7	11	128
4	0	0.	4	129
4	3	43.0	4	130
3	3	50.0	5	131
2	0	0.	2	132
3	1	25.0	3	133
....	....	....	....	134
4	0	0.	4	135
7	6	46.1	10	136
2	2	50.0	4	137
2	1	33.3	2	138
3	6	66.7	7	139
2	0	0.	3	140
....	....	....	....	141
0	2	100.0	1	142
....	....	....	....	143
....	....	....	....	144
1	0	0.	1	145
....	....	....	....	146
....	....	....	....	147
....	....	....	....	148
....	....	....	....	149
....	....	....	....	150
15	6	23.6	8	151
3	0	0.	3	152
....	....	....	....	153
9	2	18.2	8	154
1	0	0.	1	155
0	1	100.0	1	156
26	2	7.1	17	157
55	27	32.9	22	158
6	4	40.0	5	159
575	....	....	....	
....	296	....	....	
....	....	34.0	....	

:D I

TES

confer the
includes the
en is,
roval.
ve re-
er, in

In 1858,
faculty
c., 61 in
County
furnish
on are a
examina-
uivalent.
or pre-
ce exam-
l lecture-
of four
tion, $5;
ear, $10;
no other
gistration
Aug. 15,

ls depart-
nd has a
istants, a
students
its wards
material.
aths each.
n Medical
all appli-
; tuition,
Arnold A.
uates, 19.
close May

NCISCO.—
28 profes-
43. The
, the Cal-
Hospital,
ng furnish
matricula-
redentials,
instruction
mpleted is
Attendance
equired for
Hodghead.
ext session

meopathic.
19 profes-
cific Home-
Francisco
ccommodat-
al and the
for study.
hool educa-
the student
istered and
llinois and
cludes four
year, $135.
Dean is Dr.
registration
session be-

ool was or-
25 lecturers,
supplied by
plicants for
nined. The
onths each.
ars and $40
ital registra
begins Oct.

as the Pa-
he above in
ars of seven
April, 1906.

MEDICINE.—
y of 29 pro-
spital having
ildren's Hos-
ical material.
culation in a
ool, academy,
ool, or a cer-

morsitans, is a li
nearly of the sa
of the body has
project beyond t
alert, avoiding
with the h
mornings a
once heard
known that
to the ox, h

"The pois
ova placed
freely on th
portions, in
into the tr
assumes a c
eration. Th
undisturbed
itching irrit
mosquito.
diate effects
fly does, bu
supervene:
as if the an
and sometim
to graze, em
flaccidity of
months after
able to graz
the acute fo
with stagger
by it."

He details
animals, fro
"The poison
boscis, seems
reproducing i
small in qua
This was wr
confirmed sin
search.

F. Stuhlm
Africa, two h
article on the
The amount
article is sim
what thoroug
task assigned
common at Ar
palpalis of Ug
which one of
common caus
months in gla
every four or
to the skin of
through the g
When the fly
times until it
quickly made
forty seconds.
the fly is full a
quarters of a
of the probosci
the original to
winds up by s
every particula
large, movable
rudimentary.
sina morsitans
year after year
thousands of h
the disease can
and *Glossina* p
servations are r
Of the domesti

5	26 New Hampshire		27 †New Jersey.		28 New York.		29 North Carolina.		30 North Dakota.		31 Ohio.		32 Oklahoma.		33 Oregon.		34 Pennsylvania.		35 Rhode Island.		36 South Carolina		37 South Dakota.		38 Tennessee.		39 Texas.		40 Utah.		41 Vermont.		42 Virginia.		43 Washington.		44 West Virginia.		45 Wisconsin.		46 Wyoming.		Totals.	Registered on Credentials.	Examined—Passed.	Examined—Failed.	Percentage of Failures.	No. of States having Representatives.	Number.
F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F							
																									1	0																	1		1	0	0.	1	1
							1	0					1	0													0	1															5		4	1	20.0	5	2
													0	1																													2		1	1	50.0	2	3
0											0	1			0	1																											6	*2*	2	2	50.0	5	4
																																											1		1	0	0.	1	5
																																																	6
															0	1																											1		0	1	100.0	1	7
0																																											2	*2*	0	0	0.	1	8
																																																	9
																																																	10
																																																	11
																													2	1											*1*	*0*	4	*1*	2	1	33.3	2	12
																																											1	*1*				1	13
																																											2		2	0	0.	2	14
																																											1		1	0	0.	1	15
																	0	1															3	0									4		3	1	25.0	2	16
																	2	0															1	0									5		5	0	0.	4	17
																											0	1					1	0									5		2	3	60.0	5	18
																									2	0																	5		3	2	40.0	3	19
					1	0	0	1																																	*1*	*0*	3	*1*	1	1	50.0	3	20
																									1	0																	2		1	1	50.0	2	21
																																																	22
									1	0													0	1											1	2							10		5	5	50.0	7	23
									1	0																																	8	*1*	4	3	42.8	6	24
													0	1																													2		0	2	100.0	2	25
													1	0									1	0					0	1					1	0					*1*	*0*	24	*1*	14	9	39.1	13	26
				0	1																														1	0			1	0			14		9	5	35.7	8	27
																																																	28
																																											4	*1*	1	2	66.6	3	29
					0	1									0	1																											5		1	4	80.0	4	30
																																																	31
							1	0							1	2							1	0											1	1							16	*1*	8	7	46.7	11	32
							1	0	1	0			0	2	2	1											1	0	1	0					2	2			0	1	*1*	*0*	49	*2*	36	11	23.4	17	33
																																							1	0			2		2	0	0.	2	34
																																											1		0	1	100.0	1	35
																																																	36
																																											1		0	1	100.0	1	37
																																											2		2	0	0.	1	38
																																			1	1							5		1	4	80.0	3	39
																																											1		1	0	0.	1	40
																																											2		0	2	100.0	2	41
																																																	42
													1	1	0	1							0	1																			4		1	3	75.0	3	43
					0	1							0	1																					1	1							21		9	12	57.1	11	44
																																																	45
					1	0																																					2		2	0	0.	2	46
													0	1									1	0					0	1					0	1					*1*	*0*	16	*2*	7	7	50.0	10	47
					1	0																																					1		1	0	0.	1	48
																																											4		2	2	50.0	1	49
																																																	50
							0	1					1	0													1	1															7		4	3	42.8	6	51
					1	0							0	2			1	0							2	0									0	2	1	1					23		12	11	47.8	16	52
																									2	0											0	2					12		8	4	33.3	7	53
																																																	54
																																																	55
																											1	0							0	1							12		9	3	25.0	9	56
																																																	57
																																																	58
																																											3		2	1	33.3	3	59
																																											4		4	0	0.	2	60
					1	0	1	0																					1	0													7		7	0	0.	6	61
					1	1									1	0									1	0																	7		4	3	42.8	5	62
					1	0							1	0															1	0					1	0							5		5	0	0.	5	63
																	1	0																									3		3	0	0.	3	64
															0	1																											2		1	1	50.0	2	65
																									1	0																	1		1	0	0.	1	66
																																											1		1	0	0.	1	67
																																																	68
																																											1		0	1	100.0	1	69
																																																	70
			1	0	1	1	1	0											0	1			1	0					1	0					1	0							15		12	3	20.0	11	71
					1	0																																					3		2	1	33.3	2	72
											1	0			1	0																			2	1							9		7	2	22.2	5	73
																																	1	0									1		1	0	0.	1	74
																																											1		1	0	0.	1	75
																																																	76
																																																	77
					1	0									1	1																			7	3					*1*	*0*	25	*1*	12	12	50.0	8	78
																																									1	0	1		1	0	0.	1	79
																							1	0											3	0							8		8	0	0.	6	80
															1	0																											1		1	0	0.	1	81
																																																	82
													1	0	1	0			0	1																							11		6	5	45.4	9	83
													1	1																													3		2	1	33.3	2	84
															0	1																																	

MEDICAL SCHOOLS OF THE UNITED STATES

Below is given a brief description of the medical colleges in the United States that are legally chartered to confer the degree of doctor of medicine, and whose diplomas are recognized by at least one state licensing board. The list includes the sectarian as well as the regular colleges, as their graduates are physicians in the eyes of the law. The information given is, as a rule, obtained from the catalogues and has been submitted to the dean of each school for his inspection and approval. Colleges which belong to the American or the Southern Medical College Association or other organization of colleges have requirements for admission of students according to the rules of these associations, unless their requirements are higher, in which case a statement is made to that effect. Extracts from these rules are given at the close of the list of colleges.

ALABAMA.

Alabama, population 1,828,697, has two medical colleges, the Medical College of Alabama and the Birmingham Medical College, located in Mobile and in Birmingham. The population of Mobile is 40,686 and of Birmingham 42,087. Board and room may be obtained from $12 to $20 per month.

Birmingham.

Birmingham Medical College.—This school was incorporated in 1894 and is situated in Birmingham. The clinical advantages are good. The Hillman, St. Vincent's, Pratt and County hospitals are accessible to the students. The laboratories are well equipped. There are 19 professors and 9 assistants, total 28. The school is a member of the Southern Medical College Association. The course of instruction embraces four separate sessions of six months each. The fees are $75 for each of the first three years and $100 for the fourth. The Dean is Dr. B. L. Wyman. Registration, 1905-6, 72; graduates, 8. Next session open Oct. 3, 1906, and closes April 3, 1907.

Mobile.

Medical College of Alabama.—This is the Medical Department of the University of Alabama, organized in 1859. The city Hospital furnishes free clinical material. The faculty consists of 8 professors and 9 lecturers, 17 in all. It is well equipped with building, laboratories, dispensary, etc. It is a member of the Southern Medical College Association. The course of study covers four years of seven months each. The total fees for each of the first three years is $100; for the fourth year, $125. The Dean is Dr. George A. Ketchum. Total registration, 1905-6, 158; graduates 29. The forty-first session will begin Oct. 1, 1906, and will close April 30, 1907.

ARKANSAS.

Arkansas, population 1,311,564, has two medical colleges, both located in Little Rock, a city of 42,036 people. Board and lodging cost from $13 to $18 per month.

Little Rock.

University of Arkansas Medical Department.—This college was organized in 1879 as the Arkansas Industrial University Medical Department. The teaching body consists of 15 professors and 20 lecturers and assistants, total 35. Hospital facilities are furnished by Logan H. Roots Memorial Hospital, St. Vincent's Infirmary and Pulaski County Hospital, the latter having a capacity of 200 beds. The course of study covers four years of seven months each. Dr. F. L. French, Little Rock, is Secretary. The fees are: Matriculation $5, paid but once; annual fees $60, and graduation $25. Total number of students at last session, 176; graduates, 26. The next course of lectures begins Oct. 1, 1906, and ends May 1, 1907.

College of Physicians and Surgeons.—This college was organized in 1906 and has a faculty of 21. It will occupy the buildings formerly used by the Maddox Seminary. The Dean is Dr. J. P. Runyan and the Secretary, Dr. W. P. Illing. The first session will begin Oct. 1, 1906.

CALIFORNIA.

California, population 1,485,053, has nine medical colleges. Six are located in San Francisco, a city having, before the earthquake, 355,919 inhabitants. They are Cooper Medical College, Medical Department of the University of California, California Medical College, Hahnemann Medical College of the Pacific, the College of Physicians and Surgeons and the West Coast. The clinical facilities of San Francisco are good. Board and lodging can be obtained for from $20 to $30 a month. The College of Medicine of the University of Southern California is situated in Los Angeles, population 116,420. Board and lodging can be obtained in that city for $4 a week and upward. The Oakland College of Medicine and Surgery is in Oakland, population 70,386.

Oakland.

Oakland College of Medicine and Surgery.—Organized in 1902; first class grandated in 1905. The fifth session of this school will begin Aug. 21, 1906, and end May 14, 1907. The length of the course is nine months. The classes are limited to ten students each. The Registrar is Dr. Edward N. Ewer. The faculty numbers 28. Tuition is $160 yearly. Total registration, 1905-6, 10; graduates, 4. The next session begins Aug. 21, 1906, and ends May 14, 1970.

San Francisco.

Cooper Medical College.—This school was organized in 1858, though its present name was not adopted until 1882. The faculty consists of 17 professors and 44 lecturers, instructors, etc., 61 in all. Lane Hospital, adjoining the college, the City and County Hospital, containing 464 beds, and the college dispensary furnish clinical material. The minimum requirements for admission are a certificate showing that applicant has passed the regular examination for admission to the University of California, or its equivalent, or graduation from an accredited high school, academy, or preparatory school. The college itself does not hold entrance examinations. The college building supplies large laboratory and lecture-room facilities. The curriculum covers a graded course of four years of eight and a half months each. Fees: Matriculation, $5; course fee for each year, $150; laboratory fee for each year, $10; breakage deposit each year, $10; graduation fee, $25; no other charges. The Dean is Dr. Henry Gibbons, Jr. Total registration for 1905-6 was 138; graduates, 30. The next session opens Aug. 15, 1906, and will close May 8, 1907.

University of California Medical Department.—This department of the State University was organized in 1872, and has a faculty composed of 18 professors, 44 associates and assistants, a total of 62. The City and County Hospital, which admits students of this school not only to the clinics proper, but also to its wards for study, and the college dispensary furnish good clinical material. The course covers graded work for four years of nine months each. This school is a member of the Association of American Medical Colleges. Two full college years' work is required for all applicants for admission. The fees are: Matriculation, $5; tuition, $150 each year; laboratory fees extra. The Dean is Dr. Arnold A. D'Ancona. Total registration for 1905-6, was 90; graduates, 19. The thirty-fourth session opens Aug. 15, 1906, and will close May 15, 1907.

College of Physicians and Surgeons of San Francisco.—This school was organized in 1896 and has a faculty of 28 professors and 15 associate professors and teachers, a total of 43. The hospital facilities consist of the City and County Hospital, the California General Hospital, with 50 beds, and St. Winifred Hospital, with 50 beds. The daily clinics at the new college building furnish abundant material of every description. Applicants for matriculation must show a high school diploma or equivalent credentials, or be examined by the State Superintendent of Public Instruction in high school studies. The college building recently completed is well supplied with laboratories and lecture rooms. Attendance upon four terms of at least 30 teaching weeks each, is required for graduation. Fees, $100 per year. The Dean is Dr. D. A. Hodghead. Registration for 1905-6 was 145; graduates, 30. The next session opens Sept. 17, 1906, and closes May 17, 1907.

Hahnemann Medical College of the Pacific.—Homeopathic. This school was organized in 1884, and has a faculty of 19 professors and 23 lecturers, instructors, etc., in all 42. The Pacific Homeopathic Polyclinic, the Hahneman Hospital, the San Francisco Nursery for Homeless Children, Marie Kip Orphanage, accommodating, respectively, 45, 75 and 120 beds; Fabiola Hospital and the City and County Hospital, furnish the clinical material for study. Matriculants must possess the equivalent of a high school education. One year after entrance is permitted in which the student may complete conditions in Latin. The college is registered and accredited with New York State Regents and the Illinois and Michigan State Boards of Health. The course includes four years of seven months each. Total fees for the first year, $155, and $100 for each of the other three years. The Dean is Dr. James W. Ward, 606 Sutter St., San Francisco. Total registration for 1905-6, was 24; graduates, 4. The twenty-fourth session begins Sept. 12, 1906, and will close May 23, 1907.

California Medical College.—Eclectic. This school was organized in 1884 and has a faculty of 10 professors and 25 lecturers, and instructors, a total of 35. The clinical material is supplied by the Buena Vista and City and County Hospitals. Applicants for admission not holding diploma or certificate are examined. The course has been extended to cover four years of eight months each. Total fees are about $110 for each of the first three years and $40 for the fourth year. The Dean is Dr. D. Maclean. Total registration for 1905-6 was 36; graduates, 10. The next session begins Oct. 2, 1906, and ends May 16, 1907.

West Coast Medical College.—Organized in 1900 as the Pacific Coast College of Medicine. Name changed to the above in 1902. Had 31 graduates in 1903. Course was five years of seven months each. Destroyed by the earthquake and fire, April, 1906. The Dean is Dr. C. W. W. von Tiedemann.

Los Angeles.

University of Southern California College of Medicine.—This school was organized in 1835, and has a faculty of 29 professors and 19 instructors, 48 in all. The County Hospital having 200 beds, the Sisters' Hospital of 150 beds, the Children's Hospital of 20 beds, and a college dispensary furnish clinical material. Applicants for admission must give evidence of matriculation in a university or graduation from an accredited high school, academy, preparatory school or a California State Normal School, or a certificate from the Deputy State Superintendent of Schools, that applicant has filled the requirements of the Association of American Medical Colleges, of which this college is a member. This college gives no admission examinations. The building is provided with laboratories, amphitheater and lecture rooms, and a new clinical laboratory, erected in 1904, costing, with equipment, $25,000. The Barlow Medical Library building will be opened Oct. 5, 1906. A graded course, covering four years of thirty-two weeks each, is offered. The total fees for the first year are $145; second and third, $150 each, and $40 for the fourth year. The Dean is Dr. Walter Lindley. Total registration for 1905-6 was 128; graduates, 28. The next session opens Oct. 4, 1906, and closes June 13, 1907.

College of Physicians and Surgeons.—This school was organized in 1903. The length of each course is eight and one-half months. The faculty numbers 37 in all, 24 professors, 6 associate professors, 3 lecturers, and 4 instructors, besides a corps of clinical assistants. The registration for 1905-6 was 31; graduates, 3. The next session begins Oct. 4, 1906, and ends June 18, 1907. The Dean is Dr. Charles W. Bryson, Delta Bldg., Los Angeles.

COLORADO.

Colorado, with a population of 539,700, has three medical colleges. Two of these, Denver and Gross College of Medicine and Denver Homeopathic College, are in Denver, which has a population of 144,588; the other, the Colorado School of Medicine, is at Boulder, population 6,150. The clinical facilities in Denver available to the two colleges are the Denver County Hospital, which has a capacity of 300 beds; St. Joseph's Hospital, with 300 beds, and St. Luke's Hospital, with 75 beds. The Public Library contains 10,000 volumes on medicine. Board can be obtained in Denver for $5 a week and upward.

Denver.

The Denver and Gross College of Medicine.—This is the Medical Department of the University of Denver, and was organized in 1902 by the union of the Gross Medical College (organized 1887) and the Denver College of Medicine (organized 1880). The clinical advantages are the college dispensary, the Denver County Hospital, St. Luke's Hospital, St. Anthony's Hospital, St. Joseph's Hospital, National Jewish Hospital for Consumptives, Home for Dependent Children and the City Contagious Hospital and Mercy Sanitarium. The faculty is made up of 36 professors, 40 assistants and instructors, a total of 76. Its location is central, and the buildings are well arranged for laboratory, dispensary and didactic work. The course is graded and covers four years of eight months. The college is a member of the Association of American Medical Colleges. Final examinations at the end of each year are held. Fees for the first year are $115. For the second year, $116. Third year, $101. Fourth year, $126. Total registration, 1905-6, was 100; graduates, 26. The twenty-fifth session will begin Sept. 11, 1906, and close May 18, 1907. The Dean is Dr. S. G. Bonney.

Denver Homeopathic College.—This college, organized in 1894, beside clinical privileges in the hospital of the city and county of Denver, has exclusive privileges for clinical work in the Denver Homeopathic Hospital, the Haven, the Belle Lenox Nursery, and the Tabernacle Free Dispensary. The faculty numbers 26 professors and 7 lecturers and instructors, 33 in all. The requirements for admission are, "possession of a diploma from a literary college, university, an academy, a normal or high school; a first-grade teacher's certificate, or a previous matriculation at some reputable literary or medical college." The course of study consists of four years of eight months each. The year is divided into semesters. Examinations are held at the end of each semester in the work completed. A five-year scholarship may be had for $300 payable in advance, otherwise the tuition is $100 a year for the first, second and third years. Senior year, $75. There is a matriculation fee of $5, payable once. The Dean is Dr. Joseph B. Kinley. Total registration for 1905-6 was 23; the number of graduates, 5. The twelfth session begins Sept. 17, 1906, and will close May 8, 1907.

Boulder.

Colorado School of Medicine.—This is the Medical Department of the University of Colorado, and was opened in 1883. The University Hospital, under the control of the state, is equipped to accommodate 40 patients, and furnishes free clinical material. Both hospital and dispensary clinics are offered and the sanatorium located at Boulder offers additional advantages in this line. The faculty embraces 18 professors and 9 lecturers and assistants, a total of 27. The laboratories are well equipped and commodious. A separate building is devoted to the study of anatomy and another one is used for medical work exclusively. A complete four-year course of study in a recognized high school, or its equivalent, is required for admission. This school is a member of the Association of American Medical Colleges. The work embraces a graded course of four years of nine months each. The tuition is $50 per year; there are no other fees. The Dean is Dr. Luman M. Giffin. Total registration for 1905-6 was 70; graduates, 16. The twenty-fifth session begins Sept. 11, 1906, and closes June 7, 1907.

CONNECTICUT.

Connecticut, with a population of 908,420, has only one medical college, located in New Haven, population 114,600. Board and lodging cost $4.50 and upward per week.

New Haven.

Yale Medical School.—This is the Department of Medicine of Yale University. In 1810 a charter was granted for the establishment of this school, and in 1813 it was organized as the Medical Institution of Yale College. In 1879 a new charter changed the name to the one now used, and in 1884 the Connecticut Medical Society, which, from the granting of the first charter, had taken University authorities assumed full control. The clinical advantages are embraced under the New Haven Hospital, which contains 175 beds and is the general hospital for New Haven; the Springside Hospital, which is connected with the city almshouse, and the State Hospital for the Insane, located in Middletown, about twenty-five miles distant, which, with its 1,800 patients, offers an opportunity for special instruction in insanity in addition to the clinics. Beside these, the University has just completed a $100,000 building for the dispensary service, which offers good material for clinical teaching. The faculty embraces 12 professors, lecturers and assistants, 42, a total of 54. The lecture rooms and laboratories are large and well equipped. Matriculants are admitted without examination, provided that they have received a degree in arts or sciences, that they present certificates showing that they have successfully prosecuted the subjects of the examination at some college, high school, academy or preparatory school approved by the faculty, or that they have passed matriculation examinations equivalent to those required at some approved professional school. The course covers a four-year graded curriculum, nine months constituting a school year; the first two years the fundamental branches are studied, the third year is devoted to a systematic teaching of medicine, surgery, obstetrics and pharmacology, and in the fourth year clinical work, with medicine, surgery and the specialties, is presented. The fees are $150 each year; in the first year there are additional fees amounting to $18, and in the second, $8, and there is a graduation fee of $10. The Dean is Dr. Herbert E. Smith, New Haven. During the session of 1905-6, there were 134 matriculants and 25 graduates. The ninety-fourth session opens Sept. 27, 1906, and closes June 26, 1907.

DISTRICT OF COLUMBIA.

Washington, population 293,217, has three medical colleges; George Washington University Department of Medicine, Georgetown University School of Medicine and Howard University Medical Department. Washington offers to the student of medicine many advantages. The Army Medical Museum, the Museum of Hygiene, the National Museum, the library in the surgeon-general's office, the Toner Medical Library, and Museum of Hygiene, in all over 125,000 volumes on medicine, open to the medical student a most profitable field. The clinical advantages offered by the various hospitals are good. Owing to the many boarding houses and hotels, board and lodging can be had at reasonable rates.

Washington.

The George Washington University, Department of Medicine.—This school was organized in 1821 as the Department of Medicine of Columbian College, which in 1873 became Columbian University, and in 1904, by an act of Congress, changed its name to the George Washington University. In connection with the Department of Medicine is the University Hospital, established and maintained to afford clinical facilities for the students of the school. Beside the University Hospital, the Garfield Hospital, the Children's Hospital, the Central Dispensary and Emergency Hospital, the Providence Hospital, the Columbia Hospital, the Episcopal Eye and Ear Hospital, the U. S. Government Hospital for the Insane, and the Lutheran Eye and Ear Infirmary afford additional opportunities and are utilized for clinical instruction. Attendance on clinics is obligatory on third and fourth-year students. The faculty is composed of 38 professors and 41 demonstrators, instructors and assistants. This school is a member of the Association of American Medical Colleges. The laboratories are modern and equipped with all the needed apparatus for thorough work and instruction. The college library contains 2,000 volumes as well as the best current medical periodicals. Beginning with the session of 1909-10 matriculants must present credentials of two years' satisfactory work in an approved college of liberal arts or its equivalent. A combined course of six years' work, leading to the degrees of A.B. and M.D. is offered. The course of instruction is graded and extends through four years, each scholastic year consisting of eight months. Written and practical examinations are held during the term and written and oral in all subjects at the end of the school year. The total fees for the first year are $157; for the second year $152; for the third year, $112, and for the fourth year, $162. A breakage deposit of $5 is required. The Dean is Dr. W. F. R. Phillips, 1607 16th St. N. W. New and commodious buildings were erected and occupied in 1902. The total registration of students for the session of 1905-6 was 280; graduates, 51. The eighty-fifth session begins Sept. 26, 1906, and closes June 5, 1907.

Georgetown University School of Medicine.—This school organized in 1850, controls the Georgetown University Hospital, which affords excellent facilities for clinical teaching and ward classes Clinics are also held for the benefit of the students in Providence Hospital, containing 500 beds, at the Government Hospital for the Insane, containing over 2,000 beds; in the Children's Hospital, the Central Dispensary, Emergency Hospital and the Garfield Hospital Attendance on clinical instruction is obligatory in the third and fourth years. The faculty contains 19 professors, 35 instructors and assistants, total 54. This school is a member of the Association of American Medical Colleges. The building is conveniently located and contains spacious and well-ventilated lecture rooms, laboratories and library; the laboratories are equipped with the most approved instruments and appliances. The complete course of study extends over four terms of eight and one-half months each. Examinations are held at the end of each session. The fees are $150 each year. The Dean is Dr. George M. Kober, 1600 T St. The registration for 1905-6 was 102; graduates, 20. The next term opens on Sept. 27, 1906, and ends June 11, 1907.

Howard University Medical Department.—This institution was organized in 1867, and "in conformity with the spirit of the organic law of the University, is open to all, without regard to sex or race, who are qualified by good moral character, proper age and suitable education." The removal of any racial distinction has been taken advantage of by colored students, who compose a majority of those in attendance, but a number of white students are also receiving instruction. The Freedman's Hospital is a general hospital of 300 beds. The faculty comprises 17 professors and 27 lecturers and assistants, 44 in all. This college is a member of the Association of American Medical Colleges. Students are required to attend four courses of lectures in separate years of eight months each. The fees of each session are $80, plus $2 per part for dissecting material, and $10 for graduation. Board can be had at the school dining hall for $9 a month, and a room in the dormitory for $15 a term. The Dean is Dr. Robert Reyburn, 2129 F St. Registration for 1905-6 was 157; graduates, 29. The thirty-ninth session begins Oct. 1, 1906, and closes June 1, 1907.

GEORGIA.

Georgia, population 2,216,331, has four medical colleges; Medical College of Georgia, located in Augusta, population 41,283; Atlanta College of Physicians and Surgeons, Atlanta School of Medicine, and Georgia School of Eclectic Medicine and Surgery, are in Atlanta, a manufacturing city of 96,550 population. Board and lodging may be obtained for from $3 to $5 per week.

Augusta.

Medical College of Georgia.—This school was organized as a medical academy in 1829, and in 1873 was made the Medical Department of the University of Georgia. Its faculty includes 14 professors and 14 assistants, 28 in all. The course is four years of seven months each. Applicants for admission must, by examination, certificate or diploma, show that they possess educational qualifications equal to those required for second grade teachers in public schools; if they are deficient on examination, however, they are admitted, and they may remove the conditions any time before they appear for graduation. The City Hospital, with 130 beds; Lamar Hospital, with 80 beds; the Polyclinic and the Hospital for Contagious Diseases supply clinical material. Fees for the first two years are $75 each; third year, $100, and $130 for the last year. The Dean is Dr. Joseph Eve Allen. The total enrolment for 1905-6 was 118; graduates, 30. The seventy-fifth session begins Oct. 1, 1906, and closes May 1, 1907.

Atlanta.

Atlanta College of Physicians and Surgeons.—This school was formed in 1898 by the consolidation of the Atlanta Medical College, organized in 1854, with the Southern Medical College, organized in 1879. It has a faculty of 16 professors and 17 assistants, a total of 33. Clinical facilities are furnished by the Grady Hospital, which is the general hospital for Atlanta, clinics are free to the graduating class. First course students are required to "give satisfactory evidence to the faculty of such educational qualifications as will be deemed necessary for the successful prosecution of their medical studies. These requirements will be similar to those of other reputable medical colleges in the country." The course of study covers four years of seven months each and is graded. The buildings are large and a new building for didactic lectures and clinical work has been added. Fees: First and second years, $75 each; third and fourth, $100 each. The Dean is Dr. W. S. Elkins, 29 Luckie St. Total registration of students for 1905-6 was 182; graduates, 52. Next session begins Oct. 1, 1906, and closes April 30, 1907.

Georgia College of Eclectic Medicine and Surgery.—This school was organized in 1839, and has a faculty of 16. The college dispensary, Grady Hospital and Georgia Eclectic Hospital furnish clinical material. Applicants for admission must adhere to the requirements established in the National Confederation of Eclectic Colleges, of which this college is a member. The curriculum covers four years of six months each. The Proctor is Dr. Elzie B. Thomas, 121 Park St., West End. Total number of students for 1905-6 was 57; graduates, 15. The next session opens Oct. 3, 1906, and closes April 1, 1907 (about).

Atlanta School of Medicine.—This school was organized in 1905. A new building is now being constructed which will be completed by Sept. 15, 1906. Session of 1905-6 covered six months, which hereafter will be extended to seven months. Enrolment for 1905-6 was 220. Number of graduates, 21. Next session begins Sept. 26, 1906 and ends April 30, 1907. The Dean is Dr. Geo. H. Noble. The Proctor is Dr. Edward G. Jones.

ILLINOIS.

Illinois, population 4,821,550, has thirteen medical colleges, all located in Chicago, a city of 1,873,880 inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, Hahnemann Medical College, Bennett College of Eclectic Medicine and Surgery, College of Physicians and Surgeons, Hering Medical College, Jenner Medical College, Illinois Medical College, American Medical Missionary College, College of Medicine and Surgery, National Medical University, American College of Medicine and Surgery, and Dearborn Medical College. Room and board cost $3 a week and upward.

Colleges in Illinois have to admit students in conformity with the minimum requirements of the Illinois State Board of Health, as follows: "A diploma or certificate of graduation from a high school, or a certificate signed by a principal of a regularly organized high school or by the examiner of the faculty of a recognized literary or scientific college or university, or by the state superintendent of public instruction, or a superintendent of public schools, of having successfully passed an examination in all the several branches embraced in the curriculum of a four years' high school course. The matriculation examination shall not be conducted by any member of the faculty of the medical college. The Illinois State Board of Health will require each applicant for a state certificate to present documentary evidence of his preliminary education, together with his medical diploma, when taking the examination of the board." These conditions will govern all persons admitted to the freshman year on or after Jan. 1, 1903.

All persons admitted to the study of medicine after Jan. 1, 1910, must have had, in addition to the four years' high school course, at least one year of nine months either in a college chartered to grant liberal degrees or in a preliminary year to a medical college, this year to be devoted to the study of physics, chemistry, biology and languages.

Chicago.

Rush Medical College.—This school was founded in 1837, organized in 1843, was the medical department of Lake Forest University from 1887 to 1898, and in the latter year became affiliated with the University of Chicago. The faculty is composed of 69 professors, 185 associates, instructors, etc., a total of 254. Good clinical facilities are furnished by Cook County Hospital, caring for about 20,000 patients yearly; Presbyterian Hospital, with 250 beds; a college dispensary, and an obstetric department. In addition to these, extramural clinical courses are offered at the West Side Hebrew Dispensary, St. Luke's Hospital, St. Anthony's Hospital, the Alexian Brothers' Hospital, Illinois Charitable Eye and Ear Infirmary and Chicago Isolation Hospital. Bedside instruction is given. The requirements for admission are those of admission to the better universities or colleges, and, in addition thereto, two years of college work. This college work must have included thorough courses in college chemistry (inorganic, organic and qualitative analysis), college physics and biology, all with laboratory work, a reading knowledge of German or of French. The laboratories and their equipment are adequate. The curriculum covers graded work for four years of three quarters each, a quarter being three months. A fifth year, consisting of a hospital internship or of a fellowship in one of the departments is offered, but, for the present is optional. A continuous session is held, but credit for more than three quarters can not be obtained in any calendar year. A combined course for six years confers degrees of both science and medicine. All freshman and sophomore studies are given at the University of Chicago. The total fees are $180 each year. A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $2 to $5 annually. The Deans are Dr. Frank Billings, 100 State St., and Dr. John M. Dodson, 34 Washington St. Total registration, 1905-6 was 450; graduates, 83. The fiscal year begins July 1; final examinations are held at the end of each quarter.

College of Physicians and Surgeons.—This school was organized in 1881, and in 1896 became the Medical Department of the University of Illinois. The faculty is composed of 42 professors, 156 assistants and instructors, a total of 198. The West Side Hospital, containing 125 beds; Cook County Hospital, and a college dispensary and maternity clinic supply most of the clinical material, but under certain conditions students of this school are admitted to the following hospitals for clinical study: Augustana, Baptist, Chicago, Woman's, Samaritan, Alexian Brothers', St. Mary's and the Chicago Lying-in. This school is a member of the Association of American Medical Colleges. The laboratory, amphitheater and lecture-room space and equipment are excellent. The collegiate year is divided into two terms; the winter term of thirty-six weeks and the summer term of twelve weeks, of actual teaching. Attendance on the winter term is required in order to secure credit for a year's work, and attendance on four winter terms is required for graduation. Attendance on the summer term is optional, and the work is supplementary to the work of the winter term. Students may obtain credit for work done in certain branches, but attendance on this term does not apply on the required thirty-six months' attendance necessary for graduation. The fees are $145 each for the first two years, $150 for the third, and $175 for the fourth year. The Dean is Dr. William E. Quine, 103 State St. Total registration for 1905-6 was 556; graduates, 210. The fall term begins Sept. 25, 1906, and ends June 4, 1907.

Northwestern University Medical School.—This school was organized in 1859 as the Medical Department of Lind University, became independent as the Chicago Medical College in 1864, and in 1869 assumed its present relation as Medical Department of Northwestern University. The faculty comprises 38 professors and 78 assistants and instructors, in all 116. Wesley Hospital, with 225 beds; Mercy Hospital, containing 400 beds; Provident Hospital, 100 beds; St. Luke's, 200 beds; the Chicago Lying-in Hospital, and a college free dispensary furnish opportunities for clinical study to students of this college exclusively. Cook County and the People's hospitals are also open to them for study. Applicants for admission must, by diploma, certificate or examination, show possession of the educational requirements required to enter the College of Liberal Arts of Northwestern University. The laboratory and lecture room facilities are ample and the equipment is good. The course of study covers graded work for four years of thirty-six weeks each. Optional summer laboratory and clinical courses are also given. Final examinations are held at the end of each semester. The fees for each year are $175, and a matriculation fee of $5, paid once, is charged. The Dean is Dr. N. S. Davis, Chicago Savings Bank Bldg. The total registration for 1905-6 was 580; graduates, 125. The next session opens Oct. 2; 1906, and closes June 2, 1907.

American Medical Missionary College.—This school was organized in 1895 and has the primal object of educating men and woman as missionary physicians. The faculty numbers 27. The didactics and laboratory work, covering the first two years, are carried on at Battle Creek, Mich., and the clinical studies in Chicago. A hospital with 20 beds, in connection with the college, together with a free college dispensary with an obstetric department, supply material for practical work. The college is a member of the Association of American Medical Colleges. The course covers four years of nine months each. Total fees are $105 for each of the four years. The Secretary is Dr. E. L. Eggleston, Battle Creek, Mich. Total registration for 1905-6 was 80; graduates, 22. The twelfth session opens Sept. 18, 1906, and closes June 17, 1907.

ILLINOIS MEDICAL COLLEGE.—This school, organized in 1894, has a faculty of 34 professors and 16 assistants, a total of 50. A college dispensary and Cook County Hospital are available for clinical study. The requirements of admission include a high school diploma or its equivalent. The college is a member of the Association of American Medical Colleges. Attendance for seven months during each year is necessary for graduation. Total fees are about $125 for each year. The Dean is Dr. B. B. Eads, 103 State St. Total registration for 1905-6 was 192; graduates, 48. The next fall term begins Sept. 4, 1906.

JENNER MEDICAL COLLEGE.—This is a day and evening school, organized in 1892. The faculty consists of 46 professors and 7 assistants, 53 in all. Cook County Hospital and college dispensary supply clinical material. The course covers four years of 40 weeks each and embraces laboratory, didactic and clinical instruction. The total fees each year are $100, with a $5 matriculation fee, paid but once. The Registrar is Dr. J. G. Tyssowski, 196 Washington St. Total enrolment for 1905-6 was 250; graduates, 38. The next session begins Sept. 3, 1906, and will end June 27, 1907.

DEARBORN MEDICAL COLLEGE.—This school was organized in 1903, with a faculty of 38 professors and 4 assistants, a total of 42. The instruction, which is given in the evening only, extends over a period of five years of ten months each. Cook County Hospital, Samaritan Hospital and a college dispensary supply the clinical material. The total fees are: $5 matriculation fee, $110 tuition, and $10 laboratory deposit. The Dean is Dr. L. Blake Baldwin; the Secretary, Dr. J. L. Wells. Total registration for 1905-6 was 221; graduates, 35. The next session begins Sept. 3, 1906, and ends June 24, 1907.

HAHNEMANN MEDICAL COLLEGE.—Homeopathic. This school was organized in 1855, and has a faculty of 80. Hahnemann Hospital and a college dispensary supply clinical material. The requirements for admission are a high school diploma or its equivalent. The course is four years of eight months each. Fees: Matriculation, paid once, $5; each semester, $50, and hospital tickets, $5 each for third and fourth years. The Registrar is Dr. W. Henry Wilson. Total registration 1905-6 was 178; graduates, 58. The next session begins Oct. 1, 1906, and ends May 29, 1907.

HERING MEDICAL COLLEGE.—Homeopathic. This school was organized in 1892. Dunham Medical College, organized in 1895, was consolidated with it in August, 1902. In January, 1905, it purchased the Chicago Homeopathic College Building at 350 South Wood St., opposite Cook County Hospital, which it now occupies. The faculty comprises 40 professors and 25 associates, lecturers, etc., in all 65. Hering College Hospital, Chicago Homeopathic, Frances Willard and Cook County hospitals supply clinical facilities. The course covers four years of eight months each. The total fees for a full course are $300 if paid in advance, or $100 per year. The Dean is Dr. H. C. Allen. Total registration for 1905-6 was 48; graduates, 14. The fourteenth session begins Sept. 3, 1906, and ends May 3, 1907.

COLLEGE OF MEDICINE AND SURGERY.—Physio-Medical. This school was organized in 1896, and has a faculty of 40 professors and 3 assistants. The college dispensary supplies material for clinical work. The course covers four years of eight months each. Fees for the first, second and third years, $110 each, and $115 for the fourth. The Secretary is Dr. John C. McCandless, 6536 Ingleside Ave. Total registration for 1905-6 was 40; graduates, 5. The next session begins Sept. 26, 1906, and ends May 17, 1907.

BENNETT COLLEGE OF ECLECTIC MEDICINE AND SURGERY.—This school, organized in 1868, has a faculty of 40 professors and 12 assistants, 52 in all. The Bennett, Cook County and Baptist hospitals and a college dispensary supply clinical facilities. Matriculants must present a diploma or certificate or pass a satisfactory examination "in conformity with the minimum requirements of the State Board of Health." The course covers four years of thirty weeks each. This school is a member of the National Confederation of Eclectic Medical Colleges. Fees for each year are $100, with a matriculation fee, paid once, of $5. The Dean is Dr. A. L. Clark, Elgin, Ill. Total registration, 1905 6 was 166; graduates, 52. The thirty-ninth session begins Sept. 25, 1906, and ends May 7, 1907.

AMERICAN COLLEGE OF MEDICINE AND SURGERY.—This school was founded in 1901 and has a faculty of 65. The requirements for entrance are graduation from an accredited high school or equivalent. The course is four years of eight months each. Frances E. Willard and Cook County hospitals supply clinical material. The Secretary is Dr. J. N. Roe. The annual fee is $100; matriculation fee is $5; a total fee for one year, with board, room, light and heat, is $208. The enrolment, 1905-6 was 189; graduates, 23. The next session begins Sept. 24, 1906, and closes May 21, 1907.

NATIONAL MEDICAL UNIVERSITY.—This school was organized in 1891, and its courses include instruction in the methods of all the so-called schools of practice, including manual therapeutics. The faculty numbers 75. The requirements for entrance are in accordance with the requirements of the Illinois State Board of Health. Each year is divided into four quarters of thirteen weeks each, attendance on three quarters constituting one college year. The fees are $200 per year. The Dean is Dr. L. D. Rogers, 533 Wells St. Total matriculants for 1905-6 were 249; graduates, 29. The autumn quarter will begin Oct. 1, 1906.

INDIANA.

Indiana, population 2,516,462, has five medical colleges. Four are situated in Indianapolis, a city of 191,033 people: The Indiana Medical College, the Eclectic Medical College, the Physio-Medical College of Indiana and the State College of Physicians and Surgeons. The clinical facilities of Indianapolis are good, and board and lodging can be obtained from $3 a week and upward. The School of Medicine, Indiana University, is situated in Bloomington, a city of 5,000.

Indianapolis.

INDIANA MEDICAL COLLEGE, THE SCHOOL OF MEDICINE OF PURDUE UNIVERSITY.—Organized in 1869 as The Medical College of Indiana, Medical Department of the University of Indianapolis. In September, 1905, consolidated with Purdue University, The Central College of Physician and Surgeons and the Ft. Wayne College of Medicine, and assumed above title. Total number of students for 1905-6, 339; number graduated, 122. This college is a member of the Association of American Medical Colleges. Total fees, per term, $75. The faculty embraces 50 professors and 60 lecturers, demonstrators and assistants. Four years graded course.

ECLECTIC MEDICAL COLLEGE OF INDIANA.—This school was organized in 1900 and has a teaching force of 24. The course is four years of seven months each. Fees: For each year, $15, or for all four, $225; $25 for graduation. Total registration, 1905-6, 20; graduates, 6. The Dean is Dr. T. M. Culver, 723 So. Meridian St.; the Secretary is Dr. F. M. Wright, 1120 E. 10th St. The next session begins Sept. 21, 1906, and ends April 21, 1907.

PHYSIO-MEDICAL COLLEGE OF INDIANA.—This school was org ized in 1873 and has a faculty of 36. The course is four years eight months each. Total fees for each year are $90. The Sec tary is Dr. C. T. Bedford, Newton-Claypool Bldg. Total enro ment, 1905-6 was 23; graduates, 6. The next session begins Sep 11, 1906, and closes May 9, 1907.

THE STATE COLLEGE OF PHYSICIANS AND SURGEONS.—In affilia tion with the Indiana University. This school was organized this year. The faculty, as selected, is to consist of 26 professors, 10 assistants and 15 special lecturers, a total of 51. The college expects to equip its own hospital and polyclinic. The minimum requirements for admission are to be a full four years' high school course or its equivalent. The work covers a graded course of four years of nine months each. The first two years are to be given at Indiana University, Bloomington, while the junior and senior years are to be given at the College building, in Indianapolis, and will consist mainly of clinical instruction. The Dean is Dr. Allison Maxwell, and the Secretary is Dr. John F. Barnhill.

Bloomington.

INDIANA UNIVERSITY SCHOOL OF MEDICINE.—This school was organized in 1903, and gives the first two years of the regular four years' medical course. The year is nine months long. Two years of specified collegiate work in sciences and languages are required for entrance. The members of the faculty give their entire time to the teaching and investigation of their respective subjects. All the work of the school is university in character. The laboratory equipment is the best obtainable. The school is a member of the Association of American Medical Colleges. The faculty consists of 9 professors and 7 assistants, a total of 16. President W. L. Bryan is the Acting Dean. Dr. B. D. Myers, Secretary. The enrolment in 1905 6 was 21. The next session begins Sept. 18, 1906, and ends June 14, 1907.

IOWA.

Iowa, population 2,231,853, has five medical colleges The College of Medicine of the State University of Iowa and the College of Homeopathic Medicine of the State University of Iowa are located in Iowa City, population 7,987. In Des Moines, population 62,139, is the College of Medicine of Drake University. In Sioux City, population 31,701, is the Sioux City College of Medicine. In Keokuk, population 14,803, is Keokuk Medical College, College of Physicians and Surgeons. Board and lodging may be had in Des Moines for $15 a month and upward and in the other cities named for from $2.50 to $5 per week.

Des Moines.

DRAKE UNIVERSITY COLLEGE OF MEDICINE.—This school was organized in 1882 under the name of the Iowa College of Physicians and Surgeons. In 1900 it became affiliated with Drake University. The faculty consists of 20 professors and 30 assistants, a total of 50. The Mercy and Methodist hospitals, 200 beds, and a large dispensary clinic furnish clinical material. The college is a member of the Association of American Medical Colleges. The requirements for admission, after the 1st of July, 1905, will be a full four years' high school course or its equivalent. The work covers a graded course of four years of nine months each. The total fees for the first two years are $107 each, including laboratory and dissecting material; for the last two years, $89 each, including hospital fees. The Dean is Dr. D. S. Fairchild. The total registration for 1905-6 was 81; graduates, 10. The next session begins Sept. 17, 1906, and ends June 13, 1907.

Iowa City.

COLLEGE OF MEDICINE OF THE STATE UNIVERSITY OF IOWA.—This department was organized in 1870. The faculty is made up of 10 professors, 18 lecturers, demonstrators and assistants, a total of 28. The University Hospital, built in 1897 at a cost of $50,000, supplies the clinical material. The school is a member of the Association of American Medical Colleges. The course of study covers four years of thirty-six weeks each, embracing graded laboratory, didactic and clinical work. New laboratories have been erected, histology, embryology, anatomy, physiology, pharmacology, pathology, bacteriology and clinical medicine. Combined courses leading to more than one degree are offered. Total fees for each year are $50. The Dean is Dr. James R. Guthrie, Dubuque; Vice-Dean, Dr. Walter L. Bierring, Iowa City. Total number of students registered for 1905-6 was 267; graduates, 50. The thirty-seventh session opens Sept. 18, 1906, and ends June 12, 1907.

College of Homeopathic Medicine of the State University of Iowa.—This was organized in 1877. The faculty is composed of 12 professors and 12 lecturers and assistants, a total of 24, but some of these are of the faculty of the College of Medicine. The requirements for admission and the work, with the exception of that pertaining to homeopathy, are the same as those for the College of Medicine of the State University of Iowa. The fees are also the same. The Dean is Dr. George Royal, Des Moines. Total registration for 1905-6 was 47; graduates, 8. The thirtieth session begins Sept. 18, 1906, and will end June 12, 1907.

Keokuk.

Keokuk Medical College, College of Physicians and Surgeons.—In 1849 the College of Physicians and Surgeons, Keokuk, was organized, and four years later it became the Medical Department of the University of Iowa, continuing as such until 1870, when the original name was resumed. By the union in 1899 of this college with the Keokuk Medical College, organized in 1890, the present school under the above name was founded. The clinical material is good. St. Joseph's Hospital, having 100 beds and a splendid equipment, is open to the student for study and the clinics held there are large and varied. The faculty is composed of 21 professors and 7 assistants and demonstrators, 28 in all. This college is a member of the Association of American Medical Colleges. The studies embrace a graded course of four years of eight months each. The total fees for the first year are $66; for the second, $61; for the third, $64, and $61 for the last year. The Secretary is Dr. C. E. Ruth. Total registration for 1905-6 was 170; graduates, 50. The next session begins Sept. 18, 1906, and ends May 14, 1907.

Sioux City.

Sioux City College of Medicine.—This school was organized in 1891. The faculty numbers 26. Clinical material is supplied by St. Joseph's Mercy and Samaritan Hospitals and a college dispensary. This college is a member of the Association of American Medical Colleges. The system of study embraces a four-year graded course, eight months being a school year. Final examinations are held at the close of each course of instruction. Matriculation fee, paid but once, $5; tuition, each year, $48; hospital fees, $5, and graduating fee, $20. The President is Dr. J. N. Warren. Total number of students registered, 1905-6, was 72; graduates, 14. The seventeenth sessions opens Sept. 13, 1906, and will close May 2, 1907.

KANSAS.

Population 1,600,000, has two medical colleges. Kansas Medical College is in Topeka, population 35,388, and the School of Medicine of the University of Kansas, giving its first two years in Lawrence, population 11,123, and the last two years in Rosedale, a suburb of the two Kansas Citys, population 250,000. Board and lodging in all these places may be had for $3 to $5 per week.

Lawrence and Kansas City.

University of Kansas School of Medicine.—Was organized in 1880. In 1899 the preclinical course of two years was established. In 1905 it merged with three Kansas City schools, viz., the Kansas City Medical College, founded in 1869; the College of Physicians and Surgeons, founded in 1893, and the Medico-Chirurgical College, founded in 1896. This school is a member of the Association of American Medical Colleges. The faculty, including lecturers and clinical assistants, numbers 117. Each yearly term is thirty-six weeks in length, dividing into two semesters. The laboratories in Lawrence are extensive and well equipped. In Rosedale the laboratory for chemical pathology is a brick-and-stone structure, 50x100 feet, of three stories; besides this, the school has three dispensaries, the beginnings of a hospital of its own and the use of one public and three private hospitals. Of the faculty named above, nineteen are on salary. A combined course of six years is offered, conferring, after six years, the degrees of A.B. and M.D. The total fees are, for the first two years, $60 per year (and for non-residents of the state $70); for the last two years, $100 per year. The Dean at Lawrence is Dr. Merwin T. Sudler. The Dean of the clinical department at Kansas City is Dr. George Howard Hoxie. The number of students registered for 1905-6 was 150; graduates, 57. The next session begins Sept. 12, 1906, and will end June 5, 1907.

Topeka.

Kansas Medical College, Medical Department of Washburn College.—This college, organized in 1890, has a faculty of 28 professors and 12 lecturers and assistants, 40 in all. Good material for both medical and surgical clinics is found in Chirst's Hospital, with 100 beds, and Topeka State Hospital; the dispensary, in the college building also supplies material for class demonstration. The college is a member of the Association of American Medical Colleges. The college building affords ample laboratory and lecture-room space. The course of study is a graded one, covering four years of thirty weeks each. Individual instruction is especially aimed at. The total fees are $70 each year. The Dean is Dr. William S. Lindsay; Secretary, Dr. William McVey. The total registration for 1905-6 was 90; graduates, 18. The seventeenth session begins Sept. 4, 1906, and will close April 17, 1907.

KENTUCKY.

Kentucky, population 2,147,174, has seven medical colleges. They are all situated in Louisville, a city of 215,945 inhabitants, and are as follows: University of Louisville Medical Department, Kentucky School of Medicine, Louisville Medical College, Hospital College of Medicine, Southwestern Homeopathic Medical College, Kentucky University Medical Department and the Louisville National Medical College. Board and lodging in Louisville cost from $3 to $4 per week.

Louisville.

Kentucky School of Medicine.—This school was organized in 1850 and has a faculty composed of 20 professors, 27 lecturers, instructors and assistants, a total of 47. It is a lineal descendant of the Medical Department of Transylvania University, then situated at Lexington, Ky. The College Hospital, City Hospital and the college dispensary furnish the facilities for clinical study. The student is brought directly into contact with the patient through dispensary and bedside work by dividing the classes into sections. This college is a member of the Association of American Medical Colleges. The laboratories and their equipment are good. The curriculum embraces a four years' course of 28 weeks each. The fees for the first three years are $75 each; for the four year, $100. The Dean is Dr. W. H. Wathen, 628½ Fourth Avenue. Total number of students registered for 1905-6 was 275; graduates, 48. The next session begins Dec. 15, 1906, and will end July 12, 1907.

Louisville Medical College.—This school was organized in 1869 and has a faculty of 12 professors and 18 instructors and assistants, 30 in all. The City Hospital, College Infirmary and a dispensary offer good clinical facilities. Applicants for admission must show by diploma, certificate or examination that they are sufficiently proficient in English, arithmetic, algebra, physics and such Latin as would be acquired in one year's study. The laboratories and lecture rooms are ample. The course of study covers four years of six months each. The fees are $75 each year, with graduating fee of $25. The Secretary is Dr. Irvin Abell. Total registration for 1905-6 was 216; graduates, 54. The next session opens Dec. 11, 1906, and closes July 1, 1907.

Hospital College of Medicine.—This school is the medical department of Central University of Kentucky and was organized in 1873. The faculty is composed of 16 professors and 35 assistants, lecturers, etc., a total of 51. The Gray Street Infirmary, City Hospital and a well-equipped college dispensary present good facilities for clinical study. This college is a member of the Association of American Medical Colleges. Laboratory work, which is a prominent feature of the course, is thorough and practical. The laboratories and amphitheaters are ample in equipment and capacity, and the hospital advantages give opportunity for personal bedside instruction. The course covers four years of seven months each. Total fees for each of first three years, $75, and $100 for the fourth year. The Dean is Dr. P. Richard Taylor. Total enrolment for 1905-6 was 338; graduates, 94. The thirty-third session opens Dec. 1, 1906, and closes July 1, 1907.

Kentucky University Medical Department.—This school was reorganized in 1898. The faculty is composed of 17 professors and 25 lecturers, demonstrators, etc., 42 in all. Broadway Infirmary, the City Hospital and the college dispensary furnish clinical material. The school is a member of the Association of American Medical Colleges. The buildings provide ample facilities for clinical, laboratory and didactic instruction. The course of study embraces graded work for four years of thirty weeks each. Tuition is $75 per session and $25 graduation fees. The Dean is Dr. Thomas C. Evans, 654 Fourth Ave. Total number of students registered in 1905-6 was 284; graduates, 82. The next session begins Jan. 1, 1907, and ends July 31, 1907.

University of Louisville Medical Department.—This school was organized in 1837 under the name Louisville Medical Institute, and in 1846 assumed its present title. It has a faculty of 12 professors and 22 lecturers, demonstrators, etc., a total of 34. The University Hospital, City Hospital, Sts. Mary and Elizabeth Hospital, together with the college dispensary, furnish good clinical material. The course covers graded work for four years of seven months each. Total fees: First three years, $75 each, and fourth, $100. The Dean is Dr. J. M. Bodine. Total registration for 1905-6 was 213; graduates, 47. The seventieth session begins Oct. 1, 1906, and ends May 1, 1907.

Louisville National Medical College.—Colored. This was chartered in 1888 and shows a teaching force of 25. There is a four-year course, seven months to the year; the fees are $58, $58, $55 and $50 for the four years respectively. The Dean is Dr. E. S. Porter, Tenth and Walnut. The attendance, 1905-6, was 50; graduates, 7. The next session opens Oct. 2, 1906, and ends May 17, 1907.

Southwestern Homeopathic Medical College.—This college was organized in 1892 and has a faculty of 17 professors and 10 lecturers and assistants, 27 in all. A college dispensary supplies clinical material. The curriculum covers four years of seven months each. Total fees: First and second years, $80; third, $70, and $65 for the fourth. The Dean is Dr. A. L. Monroe. Total number of students for 1905-6 was 16; graduates, 6. Next session opens Sept. 26, 1906, and closes April 24, 1907.

LOUISIANA.

Louisiana, having a population of 1,381,625, contains two medical colleges: Medical Department of the Tulane University of Louisiana and New Orleans University. They are both situated in New Orleans, a city of 300,625 people. The cost of room and board is from $16 to $22 a month.

New Orleans.

Medical Department of the Tulane University of Louisiana.—This school was organized in 1834 as the Medical College of Louisiana, and became by law, in 1847, the Medical Department of the University of Louisiana, and in 1884 the Medical Department of the Tulane University of Louisiana. The faculty and all other instructors number over 50. By acts of legislature the Charity Hospital, with 900 beds, has been opened to the students of this school for clinical study, not only in medicine and surgery, but also in obstetrics and gynecology. In the year 1905 there were 9,074 cases treated in the wards of this hospital; these were indoor patients; and in addition 19,429 outdoor patients were treated in the free dispensary department. The Milliken Memorial Hospital, with a capacity for 200 children, is also available for study of clinical cases. Bedside instruction is given by the attending physicians to these hospitals, and postmortem examinations are held before the students. The laboratories are large and well equipped, and the lecture rooms and recitation rooms are ample. The course of study covers four terms of twenty-eight weeks each. Total fees for the first two years are $135 each and for the third and fourth $145 and $170 respectively. The Dean is Dr. Stanford E. Chaille, P. O. Drawer 261. The total number of students registered for 1905-6 was 458; graduates, 102. The seventy-third session begins Oct. 8, 1906, and will close May 8, 1907.

Flint Medical College of New Orleans University.—Colored. This school was organized in 1889 as the Medical College of New Orleans University. Name changed to the above in 1901. The faculty is made up of 10 professors, 6 lecturers and instructors, 16 in all. Four of the professors devote all their time to teaching and research. Clinical material is supplied by the Sarah Goodridge Hospital and by an outdoor clinic. This college is a member of the Association of American Medical Colleges. The curriculum covers a graded course of four years, twenty-six weeks each. The laboratories and lecture rooms are ample. Examinations are held monthly. Total fees, $50 each year. The Dean is Dr. A. D. Bush, 1566 Canal St. Total enrolment for 1905-6 was 54; graduates, 8. The seventeenth college year begins Oct. 1, 1906, and will end April 15, 1907.

MAINE.

Maine, population 694,466, has one medical college, located in Portland, population 52,656. Board and lodging cost from $3 to $5 a week.

Portland.

Medical School of Maine.—This, the Medical Department of Bowdoin College, was organized in 1820. It has 16 professors and 19 instructors, total 35. Students of the first and second years are instructed in Brunswick, a town of 6,800 inhabitants. The third and fourth year classes are taught in Portland, where are situated the Maine General Hospital and other clinical advantages. Applicants for admission, unless they possess diplomas, are examined in English, arithmetic, algebra, geometry, United States History, physics, chemistry and Latin. The course covers four years of eight months each. The total fees are $120 for the first year; for the second and third, $110, and $110 for the fourth year. The Dean is Dr. Alfred Mitchell, Brunswick. Total number of students in 1905-6 was 82; graduates, 17. The next session opens Oct. 25, 1906, and closes June 26, 1907.

MARYLAND.

Maryland, with a population of 1,188,044, contains eight medical colleges, all located in Baltimore, a city with 531,313 inhabitants. They are as follows: School of Medicine of the University of Maryland, College of Physicians and Surgeons, Baltimore University School of Medicine, Baltimore Medical College, Women's Medical College, Southern Homeopathic Medical College, Johns Hopkins Medical School and Maryland Medical College. The Bay View Hospital, having a capacity for 2,000 patients, is open to students for clinical instruction and furnishes good opportunities for practical demonstration. Board and lodging can be obtained for from $3 to $5 per week.

Baltimore.

Johns Hopkins Medical School.—This is the Medical Department of Johns Hopkins University, and was organized in 1893. The faculty comprises 11 professors, 71 lecturers, clinical professors, associate professors, associates, instructors and assistants, a total of 82. The Johns Hopkins Hospital and Dispensary furnishes abundant and varied clinical material; the lying-in department of the hospital, opened in 1896, is in successful operation. The requirements for admission demand that the applicant either has (*a*) completed the chemical-biologic course which leads to the A.B. degrees in the university; (*b*) graduated at an approved college or scientific school and can furnish evidence of an acquaintance with Latin and a fair reading knowledge of French and German, and a knowledge of physics, chemistry and biology, such as may be obtained from a year's course, including laboratory instruction. The school is a member of the Association of American Medical Colleges. The laboratories are large, well lighted and well equipped. The buildings are ample and built expressly for the purpose for which they are used. In the method of instruction special emphasis is laid on practical work in the laboratories, dispensary and wards of the hospital. The first two years are devoted mainly to practical work in the laboratories, combined with demonstrations, recitations and lectures, and during the remainder of the course opportunity for the personal study of cases is given. The work covers a graded course of four years, eight and a half months to the year. Final examinations, partly written and partly oral, include practical tests in laboratory and clinical work; the general character of the student's work is closely watched. The charge for tuition is $200 per annum, with no fees unless a microscope is rented; that fee is $5 a year. The Dean is Dr. William H. Howell, 232 West Lanvale St. Total registration in 1905-6 was 293; graduates, 84. The next session begins Oct. 3, 1906, and ends June 2, 1907.

University of Maryland School of Medicine.—This institution was organized in 1807 as the *College of Medicine of Maryland*, and in 1812, other faculties having been added, the whole was chartered under the name of the University of Maryland. The faculty is composed of 14 professors, 46 associates and lecturers, etc., a total of 60. The University Hospital, a part of which is used for a hospital for foreign seamen and another portion for a free city hospital, offers excellent clinical facilities. Besides this, the Presbyterian Eye, Ear and Throat Charity Hospital, in which 11,844 patients were treated in 1905; the Hospital for the relief of Crippled and Deformed Children, containing 40 beds; the Maternity Hospital and a college dispensary furnish material for clinical study. This school is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are ample and well equipped. An entirely new laboratory building has just been erected. The fourth-year class, divided into sections, receives special training in practical laboratory work in a well-appointed clinical laboratory. Didactic, laboratory and clinical instruction, special attention being paid to bedside work, make up the system of teaching. The course covers four years of eight months each, and is graded. The total fees for the first two years are $135 each; for the third year, $125, and $155 for the final year. The Dean is Dr. R. Dorsey Coale. The total number of students registered in 1905-6 was 339; graduates, 83. The one hundreth session begins Oct. 1, 1906, and will terminate June 1, 1907.

Baltimore Medical College.—This college was organized in 1881 and has a faculty of 59. The clinical material is furnished by the Maryland General Hospital, having a capacity of 200 beds; the Maryland Lying-in Hospital; the Mount Hope Retreat, which presents good opportunity for the study of nervous and mental diseases, and a college dispensary, which, beside the great number of ambulatory patients treated, has an outdoor department that permits of the advanced student taking care of charity cases and carrying out his own treatment. This college belongs to the Association of American Medical Colleges. The college buildings afford ample laboratory, clinical and lecture-room space. Bedside teaching in the hospital wards is carried on in sections, and every member of the senior class is required to attend throughout the session. The course of study is graded and covers four years of eight months each. The Dean is Dr. David Streett. The total number of students registered in 1905-6 was 441; graduates, 97. The twenty-sixth session opens Sept. 20, 1906, and closes May 20, 1907.

College of Physicians and Surgeons.—This school was organized in 1872, and in 1878 Washington University School of Medicine, established in 1827, was consolidated with it. The faculty numbers 53. The clinical facilities, beside those afforded in common with other schools, are supplied by the Baltimore City Hospital, containing 225 beds; the Hospital for the Colored Race, containing 100 beds; the Nursery and Child's Hospital, with 150 beds; the Maryland Lying-in Asylum and a college dispensary. This school is a member of the Association of American Medical Colleges. The work covers a graded course of four years, eight months constituting a year. Total fees are $115, $115, $115 and $135 for the respective years. The Dean is Dr. Charles F. Bevan. The total number of students registered in 1905-6 was 291; graduates, 65. The next session opens Oct. 1, 1906, and closes June 1, 1907.

Maryland Medical College.—This school was organized in 1898 and has a faculty of 19 professors, 25 associates, lecturers, etc., 44 in all. The Franklin Square Hospital, West End Maternite and a college dispensary furnish clinical material. The course of study covers four years of nine months each. A matriculation fee of $5 and total laboratory fees for the four years of $55 are charged; tuition is $75 each year. The Dean is Dr. J. B. Schwatka, 1003 North Broadway. Total registration for 1905-6 was 124; graduates, 29. The ninth session begins Sept. 15, 1906, and closes May 3, 1907.

Woman's Medical College.—This school was organized in 1882 and has a faculty of 17 professors, 15 associates, assistants and lecturers, a total of 32. The Hospital of the Woman's Medical College and a college dispensary furnish general clinical material, while abundant special material is furnished by the Presbyterian, Eye and Ear and the Sheppard and Enoch Pratt (for mental cases) Hospitals. The college is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are equipped with all necessary apparatus; the practical work is emphasized. Eight months constitute a school year and the course covers graded work for four years. The total fees for the first three years are $106 each and $81 for the last year, with $30 graduation fee. The Dean is Dr. S. Griffith Davis, 1230 Light St. Total number registered for 1905-6 was 33; graduates, 3. The twenty-fifth session opens Oct. 1, 1906, and closes May 31, 1907.

Southern Homeopathic Medical College.—This school was organized in 1890, with a faculty of 10 professors and 14 associates and lecturers, a total of 24. It now has a faculty, including professors, associates, lecturers and demonstrators, consisting of 37 in all. The clinical facilities are those offered by the Maryland Homeopathic Hospital and St. Luke's Hospital, which together have about 75 beds. There is also a polyclinic dispensary in the basement of the college building, which furnishes considerable lecture material; the obstetric department of the Maryland Homeopathic Hospital also furnishes clinical material. One of the features of the institution is the outdoor work done by the students, including a large amount of obstetric work. Applicants for matriculation must pass a satisfactory examination in English, arithmetic, geography, history and Latin, unless they possess satisfactory evidence that they have done a corresponding amount of work. The course covers graded work for four years of seven months each. The fees are $80 for the first year, $75 each for the second and third and $105 for the fourth year. The Dean is Dr. Eldridge C. Price. 1012 Madison Ave., and the Registrar is Dr. L. R. Palmer, 1021 Madison Ave. Total registration for 1905-6 was 18; graduates, 5. The sixteenth session begins Oct. 3, 1906, ends May 2, 1907.

Baltimore University School of Medicine.—This school, organized in 1884, has a faculty of 8 professors and 16 lecturers, demonstrators, etc., in all 24. The Baltimore University Hospital, Lying-in Hospital and the clinical material used in common with the other schools supply the facilities for practical work. The course is four years of nine months each. The fees are about $100 each year. The Dean is Dr. Hampson H. Biedler, 119 W. Saratoga St. Total registration for 1905-6 was 18; graduates, 7. The next session opens Sept. 6, 1906, and closes June 1, 1907.

MASSACHUSETTS.

Massachusetts, population 2,805,340, has four medical colleges: Medical School for Harvard University, Boston University School of Medicine, College of Physicians and Surgeons and Tufts College Medical School. They are all situated in Boston, a city of 594,618 inhabitants. Board and lodging can be obtained from $5 to $7 per week.

Boston.

Medical School of Harvard University.—This was organized in 1782 and has a faculty of 32 professors, 113 associates and assistants, etc., a total of 145. Beside the clinical advantages mentioned, the Boston Lyin-in Hospital, the Boston Dispensary, where 43,918 patients were treated last year; the Infants' Hospital, the Children's Hospital, Long Island Hospital, containing 250 beds, and the Marine Hospital all furnish excellent opportunity to the student for clinical study. Students are also permitted to visit the Free Hospital for Women and Carney Hospital on application to the physicians on duty. Candidates for admission "must present a degree in arts, literature, philosophy or science from a recognized college or scientific school, with the exception of such persons, of suitable age and attainments, as may be admitted by special vote of the faculty in each case. Each candidate is required to hand in the original note book in which he recorded the work performed by him in qualitative analysis, and also to pass a written examination in theoretical and descriptive chemistry. If conditioned in chemistry one year is allowed in which to remove the condition. The laboratories and lecture rooms offer ample facilities and the equipment is good; special facilities are open to those desiring to pursue advanced or original work. The course of study covers four years of nine months each; the course is graded and each corelated group as taken up presents sufficient variety to avoid monotony. A series of written, oral and practical examinations are distributed throughout the course of study. Fees: Matriculation, $5; $200 each year. The Dean is Dr. William L. Richardson, 688 Boylston St. The total registration for 1905-6 was 292; graduates, 66. The 125th session begins Sept. 27, 1906, and ends June 26, 1907.

Tufts College Medical School.—This school was organized in 1893 as the Medical Department of Tufts College. It has a faculty of 30 professors, 55 assistants and lecturers, etc., a total of 85. Clinical material is furnished by the Boston City Hospital, Massachusetts Charitable Eye and Ear Infirmary, Free Home for Consumptives, Free Hospital for Women, Boston Dispensary, Cambridge Hospital, St. Elizabeth's Hospital, Carney Hospital and the college dispensary; the student has also the advantages derived from an out-department in connection with the Boston Dispensary. "Graduates of an approved high school, college or university and students having certificates of entrance to a college or university, or holding the State of New York Regents' certificate," also certain approved preparatory school graduates, are admitted without examination; all others must pass an examination in English, Latin, physics and mathematics, including elementary algebra and plane geometry, besides one elective subject to be chosen from American history, French, German, chemistry or biology. The laboratories and lecture rooms are ample in their equipment and capacity. Teaching is carried on by means of lectures, recitations and practical work in the laboratories and clinics; frequent examinations are held during a course and final examination on completing the subject. Graded instruction covering four years of eight months each makes up the full course. The total fees are $150 each year; dissecting material is furnished at cost. The Dean is Dr. Harold Williams. Total number of students for 1905-6 was 375; graduates, 73. The thirteenth session begins Sept. 26, 1906, and ends June 1, 1907.

College of Physicians and Surgeons.—This school was organized in 1880 and has a faculty of 27 professors and 18 lecturers and assistants, a total of 45. Clinical facilities are furnished by the North End Dispensary Hospital, Union General Hospital and the city and state institutions. This school is a member of the Association of American Medical Colleges. The course of study covers graded work for four years of nine months each. The total fees for the first year are $100 and for each of the other years about $110, with a graduation fee of $30. The Dean is Dr. C. H. Cobb, Hotel Oxford, Boston, and the Registrar is Dr. John H. Jackson, 155 Franklin St., Fall River. Total students registered 1905-6, 134; graduates, 20. The twenty-seventh session begins Sept. 19, 1906, and ends June 21, 1907.

Boston University School of Medicine.—Homeopathic. This school was organized in 1873. In 1874 the New England Female Medical College, founded in 1848, was merged into it. The faculty includes 23 professors, 36 associates and assistants, etc., a total of 59. Clinical material is furnished by the Massachusetts Homeopathic Hospital, containing 235 beds, an out-patient department, a maternity hospital and the Westborough Insane Hospital, 800 patients. Candidates who have taken their degrees in arts, philosophy or science are not examined; certificates of graduation from approved high and preparatory schools accepted in lieu of entrance examinations; all others are examined in English, Latin, French or German, history, mathematics, physics and chemistry. The instruction is graded and covers a period of four years, eight months each. Total fees for the first year are $105; for the second and third, $125 each, and for the last year $155. The Dean is Dr. John P. Sutherland, 302 Beacon St. Total registration for 1905-6 was 100; graduates, 23. The thirty-fourth session opens Oct. 4, 1906, and closes June 5, 1907.

MICHIGAN.

Michigan, population 2,420,982, has six medical colleges. Two of these, University of Michigan Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a city of 16,033 people. Board and lodging cost from $2.50 to $5 a week. Detroit, a city of 309,653 inhabitants, contains three medical colleges, as follows: Detroit College of Medicine, Detroit Homeopathic College and the Michigan College of Medicine and Surgery. Board and room can be obtained for $3 a week and upward. Grand Rapids Medical College is located in Grand Rapids, population 91,630. Room and board cost from $3 to $3.50 a week.

Ann Arbor.

University of Michigan Department of Medicine and Surgery.—This was organized in 1850 and has a faculty composed of 19 professors, 40 associates, instructors, etc., a total of 59. The University Hospital, with nearly 200 beds, furnishes the clinical facilities. The requirements for admission provide that the applicant, either by certificate or examination, show a sufficient knowledge of the following: English grammar, rhetoric and composition; United States and general history; algebra, through quadratics, plane and solid geometry and plane trigonometry; physics, biology and chemistry, these subjects to be accompanied by laboratory work; German or French and Latin. The laboratories and their equipment are good and the training in them and in didactic work is thorough. The new medical building, accommodating the laboratories of hygiene, bacteriology, physiologic chemistry, pathology, histology, embryology and anatomy, is now completed and occupied. This school is a member of the Association of American Medical Colleges. The curriculum embraces four years of nine months each. A combined course leading to degrees in both arts and medicine in six years is offered. The total fees for Michigan students for the entire course of four years is about $300, and for others $350. The Dean is Dr. Victor C. Vaughan. Total registration for 1905-6 was 442; graduates, 70. Next session begins Sept. 25, 1906, and will end June 20, 1907.

Homeopathic College, University of Michigan.—This department of the university was organized in 1875 and has a faculty of 29 professors and 21 assistants, total 50; a part of the teaching force is from the other departments of the university. The Homeopathic Hospital, containing 140 beds, furnishes material for clinical teaching. The course covers four years of nine months each. The total fees for Michigan students are about $240 for the four years, and for other students about $295. The Dean is Dr. W. B. Hinsdale. The enrolment for 1905-6 was 80; graduates, 17. The next session begins Sept. 25, 1906, and closes June 20, 1907.

Detroit.

Detroit College of Medicine.—This school was formed in 1885 by the union of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, established 1880. The faculty embraces 21 professors, 71 lecturers, instructors, etc., a total of 92. Clinical facilities are offered by the following hospitals: St. Mary's and Harper, each of which contains a free dispensary; Woman's St. Luke's, the Children's Free Hospital and the House of Providence. This school is a member of the Association of American Medical Colleges. The course covers four years of eight months each. The work includes laboratory, didactic and clinical study. Fees: Matriculation, paid once, $5; tuition, each term, $65; hospital and laboratory tickets, each $10, and diploma fee, $30. The Secretary is Dr. H. O. Walker. Total enrolment for 1905-6 was 173; graduates, 82. The next session begins Sept. 19, 1906, and will close May 30, 1907.

Michigan College of Medicine and Surgery—Saginaw Valley Medical College.—These two schools, organized in 1888 and 1896 respectively, were consolidated last year, to continue on the site of the former. The faculty numbers 51. Clinical facilities are offered by a college dispensary, the Emergency Hospital and Detroit Eye and Ear Infirmary. This school is a member of the Association of American Medical Colleges. The course covers graded work for four years of eight months each. The fees are about $80 to $95 per year; third year, $70, and $95 for the fourth year. The Dean is Dr. Hal. C. Wyman, 46 West Adams Ave. Total registration for 1905-6 was 68; graduates, 22. The next session begins Sept. 18, 1906, and will end May 17, 1907.

Detroit Homeopathic College.—This was organized in 1899 and has a faculty of 36. Grace Hospital and a college dispensary are available for study of clinical cases. Unless possessing at least a high school diploma applicants for admission will be examined by the state board. The course embraces work for four years of eight months each. Fees: From $70 to $90 per year. The Dean is Dr. D. A. MacLachlan; Registrar, J. M. Griffin. Total enrolment for 1905-6 was 33; graduates, 15. The next session begins Sept. 15, 1906, and will close May 15, 1907.

Grand Rapids.

Grand Rapids Medical College.—This was organized in 1897. The faculty is made up of 27 professors and 6 assistants, in all 33. Clinical cases in the Union Benevolent Association, St. Mary's and Woman's hospitals and St. John's Orphan Asylum and a college dispensary are available for study. The course is four years of eight months each. The total fees are about $85 for each year. The Dean is Dr. G. L. McBride, 257 East Fulton St. Total registration for 1905-6 was 40; graduates, 12. The next session opens Sept. 12, 1906, and closes May 18, 1907.

MINNESOTA.

Minnesota, population 1,751,394, contains three medical colleges: Hamline University College of Medicine and the two medical departments of the University of Minnesota, viz., the College of Medicine and Surgery and the College of Homeopathic Medicine and Surgery. They are all situated in Minneapolis, which, together with St. Paul, which is in close proximity, has a population of 386,150. The various hospitals of Minneapolis and St. Paul furnish ample clinical material. The average cost of board and lodging is $20 a month.

Minneapolis.

College of Medicine and Surgery, University of Minnesota.—This department of the University of Minnesota was created in 1883, but at that time its only function was to examine for the degrees of B.M. or M.D. In 1888, by the consolidation and absorption of the Minnesota Hospital *Medical College and the* St. Paul Medical College, its present status was assumed. The faculty is composed of 30 professors and 75 instructors and assistants, a total of 105. The medical school occupies seven buildings, and its laboratories are excellent. Eight large hospitals in the Twin Cities, beside the university dispensary and St. Paul Dispensary, afford an abundant supply of material for clinical study. The curriculum covers four years of nine months each and the work is carefully graded. The entrance requirement of two years of university in addition to four years of high school work limits the number of students, but assures a high standard of the student body. This school is a member of the Association of American Medical Colleges. Total number of students registered in 1905-6 was 189; graduates, 43. Total fees for each year, $100. The Dean is Dr. F. F. Wesbrook. The next session opens Sept. 13, 1906, and closes June 9, 1907.

College of Homeopathic Medicine and Surgery.—This is a department of the University of Minnesota and was organized in 1888. The faculty comprises 19 professors and 14 assistants, 33 in all. Instruction in the primary branches is received, in common with the students of the College of Medicine and Surgery, from the professor of the department of medicine. The course is graded, extending over four years of nine months each. The total fees for the first two years are $100 each and $80 each for the last two years. The Dean is Dr. Eugene L. Mann. Total number of students registered in 1905-6 was 15; graduates, 1. The next session opens Sept. 13, 1906, and closes June 9, 1907.

Minneapolis College of Physicians and Surgeons.—Medical Department of Hamline University. This was organized in 1883. Its faculty is composed of 29 professors and 17 instructors, a total of 46. The laboratories and lecture rooms are large, well lighted and supplied with all the necessary equipment. Clinical work is offered to the student in City Hospital, Asbury Methodist Hospital, St. Barnabas and St. Mary's hospitals in Minneapolis, Luther Hospital, City and County and St. Joseph's in St. Paul and the college dispensary. This school belongs to the Association of American Medical Colleges. The course of study covers graded work for four years, eight and a half months making a year. Total fees, first year, $90· second year, $92.50, and for each of the last two $80. The Dean is Dr. George C. Barton. Total number of students, 1905-6, was 120; graduates, 27. The next session begins Sept. 18, 1906, and ends June 5, 1907.

MISSISSIPPI.

Mississippi, population 1,551,270, has two medical colleges: The Medical Department of the University of Mississippi, located at Oxford, a city of 2,000 inhabitants, and the Mississippi Medical College, at Meridian, with a population of 15,079.

Oxford.

University of Mississippi Medical Department.—This school was organized two years ago with 6 professors and 2 assistants, a total of 8. Each college term extends over nine months. Only two years of the medical course are given. The school is a member of the Association of American Medical Colleges. Dr. W. S. Leathers is the Acting Dean. The total registration in 1905-6 was 22: graduates, none. The next session begins Sept. 21, 1906, and ends June 7, 1907.

Meridian.

Mississippi Medical College.—Organized in 1906 with 15 professors and a corps of demonstrators. Buildings are in course of construction. The Dean is Dr. N. L. Clark. The first session will begin Oct. 1, 1906.

MISSOURI.

Missouri, population 3,106,665 has *eleven medical colleges.* St. Louis, population 612,279, contains six of these, viz., St. Louis College of Physicians and Surgeons, American Medical College, Homeopathic Medical College of Missouri, Medical Department St. Louis University (Marion-Sims-Beaumont College of Medicine), Washington University Medical Department and Barnes Medical College. Board and lodging can be procured for from $3.50 to $5 a week. Kansas City, with 173,064 inhabitants, has three *colleges, namely:* University Medical College, the Hahnemann Medical College of Kansas City and Eclectic Medical University. Room and board can be obtained in this city for from $3 to $5 a week. Ensworth-Central Medical College is located in St. Joseph, population 110,479. Board and room can be had for from $3.50 to $5 a week. Department of Medicine of the University of Missouri is at Columbia, a town of 5,651. Board and lodging can be obtained at Columbia for from $2 to $5 a week.

Columbia.

Department of Medicine of the University of Missouri.—This department was organized at Columbia in 1872. The faculty includes 11 professors, 19 assistant professors, lecturers, etc., a total of 30. Clinical facilities are supplied by the Parker Memorial State Hospital. A new $40,000 building for the medical laboratories has recently been completed and has excellent equipment. Special emphasis is laid on thorough training in the scientific branches which constitute the foundation of medicine. Four years' course, nine months each, carefully graded. The university offers also a combined course of six years, conferring degrees in both arts and medicine. The candidate for entrance must present, beside the diploma from a recognized four-year high school, credentials of college work as follows: English, 6 hours; German, 6 hours; general zoology, 6 hours; general physics, 6 hours; inorganic chemistry, 6 hours. This school is a member of the *Association of American* Medical Colleges. There is no charge for tuition, the only expenses being a library fee of $10 each year and small laboratory fees. The Dean is Dr. A. W. McAlester. Total registration of students for 1905-6 was 98; graduates, 8. The next session opens Sept. 18, 1906, and closes June 7, 1907.

Kansas City.

University Medical College.—This was organized in 1881 as the University of Kansas City Medical Department, and in 1888 was reorganized under its present name. Its faculty comprises 29 professors and 41 lecturers and assistants, a total of 70. Clinical material is furnished by the University Hospital, owned by the college, with 100 beds; the City Hospital, German Hospital, Home for the Aged, containing 147 beds; the Sisters' Hospital, Scarritt and St. Margaret's hospitals, the Children's Home, St. Joseph's Orphan Asylum and the college dispensary and obstetric department. Instruction is given by means of lectures, recitations, demonstrations and laboratory work and clinics. The school is a member of the Association of American Medical Colleges. The college building, which has recently been enlarged, furnishes ample accommodations for laboratories and lecture rooms. The course of study covers four years of thirty weeks each and the work is graded. The total fees for each of the first two years are $100; for the third, $80 and $100 for the fourth year. The Dean is Dr. Samuel C. James, Bryant Bldg. The total number of student registered in 1905-6 was 235; graduates,, 54. The twenty-fifth session begins Sept. 6, 1906, and ends April 24, 1907.

Kansas City Hahnemann Medical College.—This school was formed by the union of the Kansas City Homeopathic Medical College, organized in 1888, and the Kansas City University College of Homeopathic Medicine and Surgery. It has a faculty of 37. The City Hospital, Homeopathic Hospital, the Sanitarium, Scarritt, University, Women and Children's, German, Bethany and Children's hospitals are open to its students for clinical study. The college dispensary and clinics also supply clinical material. Applicants for admission must show by diploma, certificate or examination that they have a sufficient knowledge of English, arithmetic, geography, United States history and Latin equal to one year's work. The course covers four years of seven months each. The Dean is Dr. Frank Elliott, 1023 Grand Ave. Total registration for 1905-6 was 76; graduates, 21. The next session begins Sept. 12, 1906, and closes April 15, 1907.

Eclectic Medical University.—This was organized in 1898, and has 25 in its faculty. The curriculum covers four years of seven months each. Fees, about $70 each year, with a graduation fee of $15. The Dean is Dr. Theodore Doyle. Total number of students for 1905-6 was 46; graduates, 16. The ninth session begins Sept. 11, 1906, and ends March 29, 1907.

St. Joseph.

The Ensworth Central Medical College.—This college was organized in 1876 as the St. Joseph Hospital Medical College. In 1882 it merged with the College of Physicians and Surgeons to form the St. Joseph Medical College. In 1888 changed name to Ensworth Medical College. In 1905 merged with the Central Medical College, organized in 1894, to form the Ensworth-Central Medical College. The faculty is composed of 28 professors, 13 lecturers and assistants, 41 in all. The Ensworth Deaconess Hospital with 100 beds; St. Joseph's with 250 beds; City Hospital containing 40 beds; the State Hospital, No. 2, which is open to the students once a week, and a college dispensary furnish clinical material. Applicants for admission must show by certificate or diploma, or examination that they possess an education equal to that of a graduate from a high school. The building furnishes ample laboratory and lecture room facilities. The curriculum covers a graded course of four years of seven months each. The fees are $75 for each of the first three years; the fourth year, $95. The Secretary is Dr. T. E. Potter. Total enrolment for 1905-6, 149; graduates, 34. The next session opens Sept. 10, 1906, and will close about May 10, 1907.

St. Louis.

Washington University Medical Department.—This school was organized in 1891 from the St. Louis Medical College, which was founded in 1842. In 1899 the Missouri Medical College, organized in 1840, was added. The faculty comprises 39 professors, 35 lecturers and instructors, a total of 74. Clinical material is furnished by the St. Louis Mullanphy Hospital, Washington University Hospital and Dispensary, Washington University Lying-in Hospital, Bethesda Hospital and O'Fallon Dispensary. In addition to these, the City Hospital and Insane Asylum are used in common with the other schools. The Medical Department is a member of the Association of American Medical Colleges. The college buildings, of which there are two, furnish the best laboratory and lecture-room facilities. The course is four years of eight months each, and the system of study embraces laboratory, didactic and clinical teaching. The total fees for the first year are $126.25; second, $120.25; and for the third, $106.25, and fourth, $101.25. The Dean is Dr. Robt. Luedeking. Total registration of students for 1905-6 was 239; graduates, 55. The next session opens Sept. 28, 1906, and closes May 30, 1907.

St. Louis University Medical Department (Marion Sims-Beaumont College of Medicine).—The faculty is composed of 42 professors, 63 lecturers and assistants, a total of 105. Clinical facilities are offered by Alexian Brothers' Hospital, with 250 beds; Rebekah Hospital, having a capacity of 50 patients; Josephine Hospital, 50 beds; Mt. St. Rose Throat and Chest Hospital, 150 beds; St. John's Hospital, 125 beds· St. Ann's Lying-in Hospital, 200 beds; St. Mary's Infirmary, containing 150 beds; the City Hospital and Insane Asylum, each with a capacity of 600 patients. Grand Avenue Dispensary also furnishes good material for practical instruction. This school is a member of the Association of American Medical Colleges. The buildings afford ample laboratory and lecture-room space, and they are well equipped. The course of study embraces laboratory and clinical instruction, with recitations and lectures. The curriculum covers four years of seven months each. The total fees for the first year are $100; for the second, third and fourth, $95 each. The Secretary is Dr. H. W.

Loeb, 537 North Grand Ave. Total number of students registered for 1905-6 was 295; graduates, 116. The next session opens Oct. 1, 1906, and closes May 20, 1907.

St. Louis College of Physicians and Surgeons.—This school was organized in 1878, and has a faculty of 24 professors, 15 lecturers, instructors, etc., a total of 39. The resources for clinical instruction are Jefferson Hospital, which is open to students of this college only; City Hospital, with 600 beds; Female Hospital, having 250 beds; City Insane Asylum; City Poorhouse, and the college dispensary. This college is a member of the Association of American Medical Colleges. The laboratory and lecture-room space and the equipment are ample. The course of study covers four years of seven months each, and is graded. Total fees for the first year are $80; second and third, $75 each and $85 for the fourth year. The Dean is Dr. Waldo Briggs, 2600 Gamble St. Total number of students registered, 1905-6, was 278; graduates, 53. The next session begins Sept. 15, 1906, and ends May 1, 1907.

Barnes Medical College.—(Medical Department Barnes University.) This school was organized in 1892, and has a faculty of 37 professors and 25 lecturers and assistants, a total of 62. The clinical advantages are those offered by Centenary Hospital, with 150 beds; City Hospital, the college dispensary and the outdoor obstetrical department. The laboratories are well equipped and other facilities ample. The course of study includes graded work for four years of eight months each. The total fees for the first three years are $80 each year, and $90 for the fourth year. The Secretary is Dr. C. M. Ament, 1025 Missouri Trust Bldg. Total registration for 1905-6 was 385; graduates, 72. The next session opens Sept. 11, 1906, and closes May 10, 1907.

American Medical College.—Eclectic. This was organized in 1873, and has a faculty of 17 professors. St. Louis City Hospital and a college dispensary supply ample clinical material. The requirements for admission are those of the National Confederation of Eclectic Medical Colleges of which this college is a member. The course of study covers four years of seven months each. The total fees are: Tuition, $75 per year, dissecting material, $5 per year for four years, final examination and graduation fee $25. Total registration for 1905-6 was 63; graduates, 22. The Dean is Dr. M. M. Hamlin, 2906 Lawton Ave. The next session opens Sept. 17, 1906, and closes April 18, 1907.

Homeopathic Medical College of Missouri.—This was organized in 1857, and has a faculty of 26 professors and 6 assistants, total, 32. The curriculum covers four years of seven months each. Fees: First year, $80; second, $75, third, $60, and $75 for the fourth year. The Dean is Dr. L. C. McElwee, 1221 North Grand Ave. Total registration for 1905-6 was 46; graduates, 4. *The next course begins Sept. 10, 1906, and ends April 20, 1907.*

NEBRASKA.

Nebraska, population 1,066,300, has four medical colleges: The University of Nebraska College of Medicine and John A. Creighton Medical College of Omaha, population 113,361, and Lincoln Medical College, and the Nebraska College of Medicine at Lincoln, population 44,243. Board and lodging can be obtained for from $3 to $5 a week.

Lincoln and Omaha.

University of Nebraska College of Medicine.—This was organized in 1880 as the Omaha Medical College. In 1902 an affiliation was entered into with the University of Nebraska, the name being changed to the College of Medicine of the University of Nebraska. The first two years are given at Lincoln. The last two years are given only at Omaha. The faculty is composed of 26 professors and 34 lecturers and assistants, total 60. The Douglas County, Immanuel, Wise Memorial and Omaha Methodist hospitals, together with the college dispensary, furnish an abundance of material for clinical study and demonstration. The course consists of graded studies covering four years of eight months each. The method of instruction consists of didactic and clinical lectures, section clinics, demonstrations, recitations and laboratory work. The college building is well adapted to its purpose, the laboratories being well equipped and the lecture room commodious. The fees, including breakage deposits, are $90 for the first two years, and $100 for the last two years. The college is a member of the Association of American Medical Colleges. Total number of students enroled in 1905-6, 142; graduates, 7. The Secretary is Dr. Geo. H. Bicknell, Karboch Block, Omaha. The next annual session begins Sept. 20, 1906, and ends May 25, 1907.

Omaha.

John A. Creighton Medical College.—This school, organized in 1892, is the Medical Department of Creighton University, and has a faculty of 28 professors and 26 associates, lecturers and assistants, a total of 54. The clinical facilities are those of St. Joseph's Hospital, containing 300 beds and having a clinical amphitheater connected with it; St. Bernard's Hospital, with 256 beds; Omaha General Hospital, with 100 beds; Douglas County Hospital; Mercy Hospital, and the college dispensary. Clinical material is abundant and varied. The building, which was completed in 1898, contains excellent facilities for laboratory and lecture-room work, and the equipment is adequate. In the methods of instruction including clinical, didactic and laboratory work, special emphasis is laid on practical work. The school is a member of the Association of American Medical Colleges. The course of study embraces four years of eight months each. The total fees for the first two years are $90 each, and $85 for each of the last two years. The Dean is Dr. D. C. Bryant, McCague Bldg. Total number of students registered in 1905-6 was 172; graduates, 39. The fifteenth sessions begins Sept. 4, 1906, and ends May 4, 1907.

Lincoln.

Lincoln Medical College.—Eclectic. This was organized in 1889, and has a faculty of 22. The requirements for admission are those of the National Confederation of Eclectric Medical Colleges, of which this college is a member. The course of study covers four years of thirty weeks each. The total fees for the first year are $80; second, $75; third, $75, and $85 for the fourth year, or $250 for all four years together. The Secretary is Dr. Earl E. Boyd. Total number of students for 1905-6 was 71; graduates, 15. The next session begins Sept. 13, 1906, and ends April 27, 1907.

Nebraska College of Medicine.—This college was organized in 1905. Its faculty consists of 23 professors and 5 assistants, a total of 28. Its course covers four years of eight months each. The Dean is Dr. J. F. Stevens. Registration of students during 1905-6 was 10; no graduates. The second session begins Sept. 19, 1906, and ends June 1, 1907.

NEW HAMPSHIRE.

New Hampshire, population 411,588, contains one medical college, located in Hanover, population 1,884.

Hanover.

Dartmouth Medical School.—This is the Medical Department of Dartmouth College, and was organized in 1797. Its faculty is made up of 18 professors and 3 instructors, 21 in all. The Mary Hitchcock Memorial Hospital, a cottage hospital of 36 beds, supplies the clinical material. Applicants for admission must possess an education at least equivalent to graduation from a registered high school. The laboratories afford good facilities for work. The course covers four years of thirty-two weeks each. Fees: $100 each year. The Dean is Dr. William T. Smith. The total number of students registered for 1905-6 was 59; graduates, 10. The work for the first and second years begins with that of the academic department, commencing Sept. 20, 1906, and closing June 27, 1907; for the advanced classes it begins Aug. 15, 1906, and ends April 1, 1907.

NEW YORK.

New York State, population 7,268,894, has ten medical colleges. Seven of these, College of Physicians and Surgeons, Columbia University, Long Island College Hospital, New York Homeopathic Medical College and Hospital, New York Medical College and Hospital for Women, Eclectic Medical College of the City of New York, Cornell University Medical College and the University and Bellevue Hospital Medical College, are located in New York City, population 3,716,139. This city, with its hospitals and dispensaries, offers abundant clinical material. *Board and lodging can be obtained for from $5 to $7* a week.

Albany Medical College is in Albany, a city of 93,920 people, where board and room can be had for from $4 to $5 a week.

The University of Buffalo Medical Department is situated in Buffalo, population of 381,403. Here board and lodging can be obtained for from $3.50 to $5 per week.

The College of Medicine, Syracuse University, is in Syracuse, a city of 114,443 inhabitants. Board and lodging can be obtained for from $3.50 a week upward.

New York City.

College of Physicians and Surgeons.—This school was organized in 1807 and its present relation, that of Medical Department of Columbia University, was assumed in 1860. The faculty embraces 34 professors and 174 demonstrators, instructors, etc., a total of 208. The Vanderbilt Clinic, where 45,355 patients were treated during the year 1905, and which is equipped with all modern appliances for the study and treatment of disease, and Sloane Maternity Hospital, containing 124 beds, offer exclusive clinical advantages to students of this school. The college is strongly represented on the staffs of most of the general and special hospitals of New York. In them both required and optional practical instruction is given by clinical lectures, in the dispensaries, and at the bedside, all of which are prominent features of the curriculum. These hospitals are as follows: Roosevelt, Bellevue, New York, Presbyterian, St. Luke's, General Memorial, Hospital for the Ruptured and Crippled, St. Mary's Free Hospital for Children, Willard Parker, Scarlet Fever and Reception, Riverside, New York Eye and Ear Infirmary, foundling, and the Babies' Hospital. The laboratories, lecture rooms and amphitheaters are ample in equipment and accommodation; special provisions are made to equip each student thoroughly in each of the laboratories and thus make the work individual. The work is graded, covering four years of eight months each. The Dean is Dr. Samuel W. Lambert. The total fees for the first year are $255; for the second and third, $250 and $275 for the fourth year. Total registration for 1905-6 was 450; graduates, 152. The next session begins Sept. 26, 1906, and ends June 12, 1907.

Long Island College Hospital.—This was organized in 1858 and has a faculty of 20 professors and 75 assistants, instructors, etc., a total of 95. Long Island College Hospital, containing 300 beds and connected with a four-story maternity hospital; Polhemus Memorial Clinic, Dudley Memorial and Hoagland Laboratory, completely equipped with the most modern apparatus, are all a part of the college. Beside the clinical facilities furnished by these, members of the faculty attend at Kings County, St. John's, Brooklyn, Norwegian, Williamsburg, Methodist Episcopal and the Brooklyn Eye and Ear hospitals, where the students are offered opportunities for clinical study. Many of these also contain outpatient departments, thus permitting advanced students to attend personally to cases. Bedside instruction is also given in the wards. The course covers four years of thirty weeks each. Fees: First year, $195; second, $200; third, $160, and $195 for the fourth year. The Secretary is Dr. Joseph H. Raymond. Total registration, 1905-6, was 343; graduates, 72. The forty-ninth session opens Oct. 1, 1906, and closes June 6, 1907.

Cornell University Medical College.—This department of Cornell University was established in 1898. The faculty is composed of 45 professors and 162 instructors and assistants, a total of 207. The City Hospital, having 1,000 beds; Bellevue Hospital, New York Hospital, Presbyterian, Willard Parker and Reception with 200 beds; New York Skin and Cancer; St. Francis, having a capacity of 230 beds; St. Vincent's, with 200 beds; the Manhattan Eye and Ear Infirmary, in addition to a large college dispensary, furnish the clinical resources; the material is abundant and varied. The first two years of the course are taken at New York or at Ithaca, and the work is devoted to the fundamental scientific subjects. The last two years are spent mostly in practical and clinical work and the hospital advantages are utilized. The Loomis Laboratory, a five-story modern building, is well equipped and supplies ample practical laboratory facilities required in the advanced work. "The essential features of the entire system is the division of the classes of the several years into small sections." Fees: First year, $190; second and third, $185 each, and $200 for the fourth year. The Dean is Dr. William M. Polk. Total registration for 1905-6 was 369; graduates. 59. The next session opens Sept. 26, 1906, and closes June 12, 1907.

University and Bellevue Hospital Medical College.—This is a department of the New York University, and was founded in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. The faculty is composed of 39 professors and 64 instructors, assistants, etc., in all 103. Bellevue and City Hospitals, hospitals of the workhouse and almshouse, Manhattan State Hospital for the Insane, Willard Parker and Reception hospitals, Riverside Hospital for Contagious Diseases, Randall's Island, Presbyterian, St. Luke's, St. Vincent's. General Memorial, Gouverneur, Columbus, Harlem, New York Foundling and the Society for the Lying-in hospitals, the New York Eye and Ear Infirmary and a large college dispensary are open to students of this school for a study of clinical cases. The Carnegie building, a five-story structure adjoining the college, is devoted to laboratory instruction and investigation, and, with the other two large college buildings, affords good laboratory and lecture-room facilities. A new six-story addition to the laboratory building has just been completed. The course of instruction covers four year sof eight months each. Actual clinical teaching, in conjunction with and founded on laboratory work, recitation and didactic teaching, is emphasized to the greatest possible degree. Fees: First year, $185; second and third, $180 each, and $195 for the fourth year. The Dean is Dr. Egbert Le Fevre. Total registration for 1905-6 was 481; graduates, 53. The next session opens Oct. 3, 1906, and closes June 6, 1907.

New York Homeopathic Medical College and Hospital.—This school, organized in 1858, has a faculty of 35 professors and 44 lecturers, instructors, etc., 79 in all. Flower Hospital, adjoining the college and having a completely equipped out-patient department; Metropolitan Hospital, New York Ophthalmic Hospital and the Laura Franklin Free Hospital for Children also furnish clinical facilities. The course covers four years of seven months each. Total fees for the first year, $130; second, $130; third, $125, and $155 for the fourth year. The Dean is Dr. W. H. King, 64 West Fifty-first St. Total students registered for 1905-6 was 110; graduates, 30. The next session begins Oct. 2, 1906, and ends May 16, 1907.

New York Medical College and Hospital for Women.—Homeopathic. This school was organized in 1863 and has a faculty of 17 professors, 21 lecturers and assistants, total 38. The college hospital and dispensary, the Memorial Hospital for Women, Metropolitan, Ophthalmic and the Laura Franklin Free Hospital for Children afford clinical material. The course covers four years of twenty-six weeks each. Fees: First year, $145; second, $140; third, $135, and $155 for the fourth year. The Dean is Dr. Helen Cooley Palmer, 5 West Eighty-second St. Total registration for 1905-6 was 20; graduates, 6. The next session opens Oct. 1, 1906, and closes May 14, 1907.

Eclectic Medical College of the City of New York.—This was organized in 1865 and has a faculty of 16 professors and 17 lecturers, demonstrators, etc., 33 in all. A college dispensary, Beachonian Dispensary, Manhattan and Red Cross Hospitals and Muncie Sanatorium supply clinical facilities. The work covers four years of seven months each. The total fees: First year, $125; second, $125; third, $125, and $155 for the fourth year. The Dean is Dr. George W. Beskowitz. Total registration for 1905-6 was 105; graduates, 15. The next session opens Sept. 27, 1906, and closes May 1, 1907.

Albany.

Albany Medical College.—This school was organized in 1838, and in 1873 it assumed its present relations as Medical Department of Union University. The faculty is composed of 15 professors and 65 lecturers, instructors and assistants, a total of 80. Albany, St. Peter's, Child's and County hospitals, South End Dispensary, Eye and Ear Infirmary and the Albany Hospital for Incurables, also the free dispensaries connected with each, are open to students for clinical study. The curriculum embraces graded work for four years of seven and one-half months each. Teaching is carried on in the laboratories, clinics and lecture rooms. Examinations are held twice a year in all subjects. Fees: First year, $130; second year, $145; third year, $120, and fourth year, $130. The Dean is Dr. Samuel B. Ward. Total registration for 1905-6 was 165; graduates, 32. The next annual session opens Sept. 25, 1906, and closes May 7, 1907.

Buffalo.

University of Buffalo Medical Department.—This was organized in 1846 and has a faculty made up of 47 professors and 45 assistants, lecturers, etc., a total of 92. Buffalo General Hospital, Hospital of the Sisters of Charity, Erie County and German hospitals and the German Deaconess' Hospital supply ample clinical material for study. A college dispensary, recently organized, is also of value in practical work. The buildings and hospitals are well equipped for clinical and laboratory work. Bedside instruction is insisted on and the senior students are permitted to assist in operations and give anesthetics. This school is a member of the Association of American Medical Colleges. The course covers four years of eight months each. The tuition is $125 each year; this does not include laboratory fees. The Dean is Dr. Matthew D. Mann, 37 Allen St. Total registration for 1905-6 was 225; graduates, 44. The sixty-first session opens Sept. 24, 1906, and closes May 31, 1907.

Syracuse.

College of Medicine, Syracuse University.—This school was organized in 1872 as the Medical Department of Syracuse University. The faculty is composed of 14 professors and 40 lecturers, instructors, etc., in all 54. Clinical facilities are furnished by St. Joseph's Hospital, Hospital of the Good Shepherd, Syracuse Hospital for Women and Children, Onondaga County Orphan Asylum and the Syracuse Free Dispensary. The laboratories and amphitheaters are large and well equipped. The curriculum embraces a four years' graded course, eight months making a school year. The average total fees for each of the four years is $167.25. The Dean is Dr. Gaylord P. Clark, 619 West Genessee St. Total number of students registered for 1905-6 was 153; graduates, 23. The next session opens Oct. 2, 1906, and closes June 12, 1907.

NORTH CAROLINA.

North Carolina, population 1,893,810, has four medical schools which grant degrees and one which gives only the first two years of the medical course. The Medical Department of the University of North Carolina is located at Chapel Hill, population 1,100, and at Raleigh, population 13,934. The Leonard School of Medicine is at Raleigh. The North Carolina Medical College is located at Davidson, population 904, and at Charlotte, population 20,050. Wake Forest School of Medicine is at Wake Forest, population 823.

Chapel Hill and Raleigh.

University of North Carolina Medical Department.—This school was organized in 1891 and formerly gave only the work of the first two college years at Chapel Hill. In 1902 the course was extended to four years by the establishment of a department at Raleigh, in which the last two years are given. Degrees are now conferred and the faculty in the completed school of medicine numbers 39. It is a member of the Association of American Medical Colleges. The number of students enroled in 1905-6 was 94, graduates, 11. Total fees are $85 per year. Board, room, light and heat may be had for from $84 to $102 per college year. The President is Dr. F. P. Venable, Chapel Hill. The Dean of the Department at Raleigh is Dr. H. A. Royster. The next session will begin Sept. 10, 1906, and end June 7, 1907.

Raleigh.

Leonard School of Medicine.—Colored. This department of Shaw University was established in 1882 by the American Baptist Home Mission Society to train colored students of medicine. It has a faculty of 10. A free hospital and dispensary supply clinical material. A preliminary entrance examination is given to applicants not possessing a certificate or diploma of educational requirements. The course covers four years of seven months each. The total fees for each year are $75. The dormitory plan is adopted generally, and board and room cost $2 a week. The Dean is Dr. James McKee. Total enrolment for 1905-6 was 147; graduates, 33. Next session opens Oct. 1, 1906, and closes May 1, 1907.

Davidson and Charlotte.

North Carolina Medical College.—This school was organized in 1893 and has a faculty of 16 professors and 8 assistants, a total of 24. The Presbyterian Hospital in Charlotte supplies the clinical facilities. The course covers four years of eight months each, the last two years being given at Charlotte. Fees: First three years, $85 each, and $100 for the fourth year. The President is Dr. J. P. Monroe, of Davidson. Dr. I. W. Faison, Charlotte, is Dean of the Charlotte faculty. The total registration for 1905-6 was 92; graduates, 24. The next session begins Sept. 6, 1906, and closes April 15, 1907.

Wake Forest.

Wake Forest School of Medicine.—This school was organized in 1902. It only gives the first two years of the medical course. Each annual course extends over nine months. The school is a member of the Association of American Medical Colleges. It has a faculty of 10 and last year enroled 20 students. The fees are $85 a year. The Dean is Dr. Frederick K. Cooke. The next session opens Aug. 29, 1906, and closes June 1, 1907.

NORTH DAKOTA.

North Dakota, population 319,146, has one medical college, the College of Medicine of the State University of North Dakota, which is situated at University. Only the first two years of the medical course are given, which may be elected as the last two years of the A.B. degree.

University.

University of North Dakota College of Medicine.—This department was organized in 1905. The faculty is composed of 5 professors and 7 instructors, a total of 12. The course consists of two years' academic work and two years of medical college subjects, occupying nine months each year. The completion of this work in a satisfactory manner entitles the student to the A.B. degree from this institution, and a certificate of completion of the medical subjects embraced in the course. The total fees for each of the medical subject years are $50. The Dean is M. A. Brannon. The enrolment during 1905-6, the first session, was 7. The second session begins Sept. 25, 1906, and closes June 13, 1907.

OHIO.

Ohio, population 4,157,545, has ten medical colleges. Four of these, the Medical College of Ohio, Eclectic Medical Institute, Miami Medical College and Pulte Medical College are located in Cincinnati, a city of 332,934 inhabitants. The clinical advantages of Cincinnati are good; beside many smaller hospitals, the Cincinnati Hospital is open to the students for study. Board can be procured in Cincinnati for from $3 to $5 per week. The Laura Memorial Woman's Medical College has ceased to exist.

Cleveland, population 414,950, contains three medical schools: Western Reserve University Medical College, Cleveland College of Physicians and Surgeons and the Cleveland Homeopathic Medical College. The City Hospital, with 275 beds, is used in common by them for clinical study. Board and lodging can be had for from $2.50 to $5 a week.

Columbus, population 135,487, contains two; Starling Medical College and Ohio Medical University. Board and lodging cost from $2.50 to $5 per week.

Toledo, with 145,901 people, has one medical school, Toledo Medical College. It has good clinical advantages. Board and room can be had for from $3 to $5 a week.

Cincinnati.

Medical College of Ohio.—This is the Medical Department of the University of Cincinnati, organized in 1819, and has a faculty made up of 25 professors, 24 lecturers and assistants, a total of 49, there being also 34 clinicians to the dispensary. Good Samaritan Hospital, with 100 beds; Cincinnati Hospital, with 550 beds, furnish opportunities for bedside instruction, and a well-equipped college dispensary furnish clinical facilities. The buildings supply ample laboratory and lecture-room space and their equipment is good. The course of study is graded and covers four years of eight months each. This school is a member of the Association of American Medical Colleges. The lecture fees are $125 each year for each student entering after July 1, 1903; $100 each year for those who have matriculated prior to July 1, 1903. In addition there is a matriculation fee of $5, payable but once, and a graduation fee of $25. Total registration of students for 1905-6 was 137; graduates, 33. The Dean is Dr. F. Forchheimer. The next session begins Sept. 28, 1906, and ends June 1, 1907.

Miami Medical College.—This school was organized in 1852 and has a faculty of 22 professors and 29 lecturers and demonstrators, a total of 51. The clinical facilities are furnished by the Cincinnati Hospital and a college dispensary. This college is a member of the Association of American Medical Colleges. The curriculum embraces a four-year graded course of eight months each. The total fees are, for the first year, $130; for the second and third, $125, and $150 for the fourth year. The Dean is Dr. J. C. Oliver, 628 Elm St. The total registration for 1905-6 was 78; graduates, 24. The next session opens Oct. 1, 1906, and closes June 1, 1907.

Eclectic Medical Institute.—This school, organized in 1845, has a faculty of 17 professors and 12 lecturers and assistants, a total of 29. The Seton Hospital, Cincinnati Hospital and a college dispensary furnish clinical material. It is a member of the National Confederation of Eclectic Medical Colleges. The course covers four years of thirty-one weeks each. The fees are $75 for each year, with a graduation fee of $25. The Dean is Dr. Rolla L. Thomas, 792 East McMillan St. Total enrolment, 1905-6, was 116; graduates, 35. The next session begins Sept. 17, 1906, and closes April 17, 1907.

Pulte Medical College.—Homeopathic. This was organized in 1872 and has a teaching force of 20 professors and 14 assistants, 34 in all. Pulte Hospital, Cincinnati Hospital, Bethesda Hospital, Home of the Friendless and Foundlings and a college dispensary supply clinical material. The curriculum covers four years of seven months each. Fees: First year, $80; for the second and third, $75 each, and $100 for the fourth. The Dean is Dr. Charles E. Walton. Total enrolment for 1905-6 was 13; graduates, 3. The next session opens Oct. 3, 1906, and closes May 1, 1907.

Cleveland.

The Cleveland College of Physicians and Surgeons.—This school was organized in 1863 as Charity Hospital Medical College, became the Medical Department of Wooster University in 1869 and the Medical Department of the Ohio Wesleyan University in 1896, when it assumed its present title. The faculty is composed of 31 professors, 30 lecturers, assistants, instructors, etc., 61 in all. Cleveland General Hospital, Cleveland City Hospital and a college dispensary are used for regular clinical teaching. St. Alexis, St. John's, St. Clair and Mount Sinai hospitals are utilized for extramural clinics. This school is a member of the Association of American Medical Colleges. The school is co-educational. The total annual fees are $130. The curriculum covers four years of eight months each. The Dean is Dr. R. E. Skeel, 785 Prospect St. Total enrolment for 1905-6 was 88; graduates, 22. The next term opens Oct. 1, 1906, and closes May 22, 1907.

Western Reserve University Medical College.—The Medical Department was organized in 1843. Its teaching faculty includes 22 professors, 34 lecturers, demonstrators and assistants, a total of 56. Clinical facilities are offered students of this school by Lakeside Hospital, having 250 beds; St. Vincent's Hospital, having about 150 beds; City Hospital, with 250 beds; St. Alexis Hospital, with 250 beds, and the Home of Maternity, with the dispensary service at Lakeside and Charity hospitals, and a tuberculous dispensary at the college. The laboratory chairs are endowed, the teachers devoting their entire time to teaching and research work. A clinical laboratory has recently been added, where a systematic course of instruction is given. This college is a member of the Association of American Medical Colleges. The curriculum embraces four years of eight and one-half months each. Three years of college work are required for admission to first year of medical course. The total fees are $125 for each year. The Dean is Dr. B. L. Millikin, 1110 Euclid Ave. Total enrolment for 1905-6 was 65; graduates, 12. The next session begins Oct. 1, 1906, and closes June 13, 1907.

Cleveland Homeopathic Medical College.—This school was founded in 1897 by a consolidation of Cleveland University of Medicine and Cleveland Medical College, the former of which was incorporated in 1850, and is the second oldest homeopathic medical college in the United States. The faculty includes 35 professors and 18 adjuncts, lecturers, etc., 53 in all. The clinical facilities are obtained from the Cleveland Homeopathic Hospital, the Cleveland City Hospital, the Cleveland Maternity Hospital, and a college dispensary. The course embraces four years of thirty weeks each. Fees, $125 per year. The Dean is Dr. George H. Quay. Total number of students registered, 1905-6 was 50; graduates, 14. The next session opens Sept. 26, 1906, and closes May 15, 1907.

Columbus.

Ohio Medical University.—This school was organized in 1890, and has a faculty of 22 professors, 6 instructors, 5 assistants and 2 demonstrators, 35 in all. The Protestant Hospital, State Hospital, Ohio Penitentiary Hospital and a college dispensary provide material for clinical work. This school is a member of the Association of American Medical Colleges. The course is four years of 34 weeks each. Fees: First year, $105; second year, $100; third year, $100, and $110 for the fourth year. The Dean is Dr. George M. Waters. Total students for 1905-6 was 142; graduates, 42. The next session begins Sept. 11, 1906, and closes May 7, 1907.

Starling Medical College.—This school was organized in 1847 and has a faculty composed of 19 professors and 20 lecturers, associates, etc., a total of 39. St. Francis Hospital, which is under the control of this faculty; Hawkes' Hospital of Mt. Carmel, the Lawrence Hospital, St. Anthony Hospital and a college dispensary are available for clinical study. This college is a member of the Association of American Medical Colleges. The work covers four years of thirty weeks each. Fees: $100 per year; matriculation fee, $5; graduation fee, $10. The Dean is Dr. Charles S. Hamilton. Enrolment for 1905-6 was 86; graduates, 30. The sixtieth session opens Sept. 12, 1906, and closes May 9, 1907.

Toledo.

Toledo Medical College.—The school was organized in 1882, and in 1904 became the Medical Department of Toledo University. It has a faculty of 20 professors, 20 lecturers and assistants, in all 40. Toledo Hospital, St. Vincent's and Robinwood hospitals, Lucas County Infirmary Hospital, Toledo Hospital for the Insane, and a free dispensary supply clinical facilities. This college is a member of the Association of American Medical Colleges. The curriculum embraces four years of eight months each. The fees are $75 for each year, with a matriculation fee of $5, payable once. The Dean is Dr. Park L. Myers, 2730 Monroe St. Total enrolment for 1905-6 was 22; graduates, 9. The next session opens Sept. 22, 1906, and closes May 11, 1907.

OKLAHOMA.

Oklahoma, population 398,331, has two medical schools, the School of Medicine of the University of Oklahoma, which is located at Norman, a city of 2,225 inhabitants, and the College of Medicine of Epworth University, located at Oklahoma City, which has a population of 12,800.

Norman.

School of Medicine, University of Oklahoma.—This school was organized in 1903 and gives only the first two years of the medical course, each session extending over a period of nine months. Two courses are offered, one covering two years, at the completion of which a certificate is given; the other a combined course of four years, leading to the degree of B.S. Students are encouraged to take the latter course. The college has a faculty of 10. The school is a member of the Association of American Medical Colleges. Total registration for 1905-6 was 16. The Dean is Dr. R. P. Stoops; the Corresponding Secretary E. M. Williams. The next session begins Sept. 11, 1906, and ends June 13, 1907.

Oklahoma City.

College of Medicine Epworth University.—Organized in 1904, giving only the first year of the medical course. The full four years' course has been given since Oct. 1, 1905. The faculty consists of 15 professors and 12 assistants, instructors, etc., a total of 27. the Oklahoma City, and St. Anthony's hospitals, Amie Rescue Home and a college dispensary furnish material for clinical instruction. The laboratories are well supplied and the lecture rooms are large, well lighted and well ventilated. The entrance requirement is a high school diploma or its equivalent. The course of study embraces graded work for four years of seven months each. The total fees are about $70 each year. The Dean is Dr. A. K. West; Secretary, Dr. H. C. Todd. The registration for 1905-6 was 16; no graduates. The next session begins Oct. 7, 1906, and ends May 7, 1907.

OREGON.

Oregon, population 413,536, has two medical colleges: Medical Department Willamette University, located in Salem, a city of 4,258 people, and University of Oregon Medical Department, in Portland, a city of 98,655 population. Board and lodging may be obtained in Salem for from $3 to $5 per week and in Portland for from $4 to $6.

Salem.

Medical Department Willamette University.—The school was organized in 1864. The faculty consists of 16 professors and 3 assistants, a total of 19. Clinical facilities for study are supplied by Salem Hospital, and a college dispensary. This school is a member of the Association of American Medical Colleges. The course embraces four years' work of seven months each. Fees: First and second years, $110 each; third, $75, and $50 for the fourth year. The Dean is Dr. W. H. Byrd. Total enrolment for 1905-6 was 50; graduates, 15. The next session begins Oct. 1, 1906, and ends May 10, 1907.

Portland.

University of Oregon Medical Department.—This department of the State University was organized in 1887, and has a faculty of 14 professors and 22 assistants, lecturers, etc., a total of 36. Good Samaritan and St. Vincent's hospitals, containing 200 and 350 beds, respectively, and Multomah County Hospital furnish good material for clinical study. Out-patient clinics are held at Pilgrim Chapel. The requirements for admission are those of the Association of American Medical Colleges, but the members of the faculty do not hold examinations for entrance. The college building is modern and well equipped, presenting ample teaching facilities. The course is four years of seven and one-half months each. Fees: First year, $142.50; second, $137.50; third, $107.50, and for the fourth, $57.50. The Dean is Dr. Simeon E. Joseph. The total number of students for 1905-6 was 82; graduates, 16. The next session opens Sept. 17, 1906, and closes May 1, 1907.

PENNSYLVANIA.

Pennsylvania, population 6,302,115, has seven medical colleges. Of these Philadelphia, having a population of 1,367,716, contains six, as follows: University of Pennsylvania Department of Medicine, Jefferson Medical College, Hahnemann Medical College, Woman's Medical College of Pennsylvania, Medico-Chirurgical College of Philadelphia and Temple College Department of Medicine. The clinical facilities of Philadelphia present abundant and varied material for study. Beside the individual hospitals connected with each of the schools the charity hospitals are open to all the students in common. Board and lodging cost from $4 a week upward.

The other school, Western Pennsylvania Medical College, is situated in Pittsburg, a city of 345,043 people. The cost of board and lodging is from $4 to $6 a week.

Philadelphia.

University of Pennsylvania Department of Medicine.—This is the first medical college established in this country, having been organized in 1765 as the Medical Department of the College of Philadelphia; the first degree was granted in 1768. When from the College of Philadelphia the University of Pennsylvania was organized in 1791, it became the Medical Department of the University, its present relation. The faculty is made up of 27 professors, 2 associate professors, 4 adjunct professors, 6 assistant professors, 106 demonstrators, lecturers, associates, instructors, etc., a total of 145. Abundant and varied clinical material is furnished by the University Hospital, capacity 300 beds, which treats over 14,000 cases annually; University Maternity Pavilion, with 50 beds; Philadelphia Hospital, containing 1,000 beds; Pennsylvania Hospital, Children's Hospital and the Southeastern Hospital and Dispensary. Special attention is paid to bedside instruction and to thoroughly practical work. Applicants for admission must furnish evidence of the education required to enter the academic department of the university. The buildings known as Medical Hall, Medical Laboratory Building, the laboratories of Pathology, Physiology and Pharmacology, the Laboratory of Hygiene, the Wistar Institute of Anatomy, and the Wm. Pepper Clinical Laboratory supply excellent laboratory and lecture room facilities and are well equipped. The course embraces study for four years of nine months each. The total fees for each year are $200, with a matriculation fee of $5 for the first year. The Dean is Dr. Charles H. Frazier. Total enrolment for 1905-6 was 577; graduates, 103. The next session opens Sept. 28, 1906, and closes June 19, 1907.

Jefferson Medical College of Philadelphia.—This school was organized in 1825, and has a faculty of 31 professors and 82 lecturers, demonstrators, etc., a total of 113. Jefferson Hospital, together with its maternity Department, are used exclusively by students of the school for clinical study. Bedside instruction is given daily to small sections of the senior class. In addition, the following hospitals are open for study of clinical cases: Pennsylvania, Philadelphia, St. Joseph's, German, Municipal and Wills Eye hospitals. The course of study covers graded work of four years of eight months each. The laboratories are large and well equipped, a new five-story laboratory building having recently been added; the lecture rooms and amphitheaters are also ample. A new fireproof hospital is now building, to cost $1,000,000, to be finished in 1906. The tuition is $180 a year, with a matriculation fee of $5, paid but once. The Dean is Dr. James W. Holland. The total number of students for 1905-6 was 617; graduates, 200. The next session opens Sept. 24, 1906, and closes June 4, 1907.

Medico-Chirurgical College of Philadelphia.—This school was organized in 1881, and has a faculty made up of 25 professors and 58 assistants, lecturers, etc., 83 in all. Opportunities for clinical study are offered exclusively to students of this school by the Medico-Chirurgical Hospital, with 125 beds, and its children's and maternity hospital, having 30 beds. In common with other schools, the following are used: Philadelphia, Pennsylvania, German, Samaritan, St. Joseph's, St. Agnes', St. Mary's, Methodist, Jewish and the Philadelphia Lying-in hospitals. With new laboratories, lecture rooms, a modern hospital and fine clinical amphitheater, this college is amply provided and the equipment is good. The work embraces four years of eight months each. Fees: $150 per annum; matriculation, $5, payable once. The Dean is Dr. Seneca Egbert. Total enrolment, 1905-6 was 467; graduates, 84. The next session opens Sept. 24, 1906, and will close June 1, 1907.

Woman's Medical College of Philadelphia.—This school was organized in 1850, and has a faculty of 10 professors and 37 assistants, lecturers, etc., in all 47. Clinical facilities are offered by the Hospital of the Woman's Medical College of Pennsylvania, Woman's Hospital, West Philadelphia Hospital for Women, German, Jewish, Children's and Philadelphia hospitals, Presbyterian Hospital, Wills Hospital for Diseases of the Eye, the Howard Hospital and the Philadelphia Lying-in Charity. The lecture room and laboratory equipment is good. The curriculum covers four years of eight months each. Fees: $140 each year. The Dean is Dr. Clara Marshall. Total enrolment for 1905-6 was 136; graduates, 25. The next session begins Sept. 26, 1906, and will end May 22, 1907.

Hahnemann Medical College and Hospital.—Homeopathic. This was organized in 1848 and has a faculty of 30 professors and 44 lecturers, instructors, etc., in all 74. Hahnemann College Hospital furnishes material for clinical work. The requirements for admission are those established by the Medical Council of Pennsylvania. The work covers four years of eight months each. Fees: For each year, $150; matriculation, $5. Total number of students for 1905-6 was 186; graduates, 52. The Dean is Dr. Herbert L. Northrop. The next session begins Sept. 25, 1906, and will end May 24, 1907.

Medical Department of the Temple College.—This department was organized in 1901, and has a faculty of 18 professors and 32 assistants, etc., a total of 50. Instruction is given in the evening, and the course extends over five years of nine months each. The fees are $125 per year. The Dean is Dr. I. Newton Snively. The enrolment for 1905-6 was 101; graduates, 14. School opens Sept. 15, 1906, and closes June 11, 1907.

Pittsburg.

Western Pennsylvania Medical College.—This is the Medical Department of the Western University of Pennsylvania, and was organized in 1886. The faculty is composed of 47 professors and 57 associates, assistants, etc., 104 in all. Clinical material for study is furnished by a college dispensary, and the Emma Kaufman Clinic, Reineman Maternity Hospital, Mercy, South Side, Passavant and St. John's hospitals. This school is a member of the Association of American Medical Colleges. The course of study embraces graded work for four years of nine months each. Special attention is given to practical bedside work. The total fees are $150 for each year. The Dean is Dr. J. C. Lange. Total enrolment for 1905-6 was 307; graduates, 46. The next session begins Oct. 1, 1906, and will close June 12, 1907.

PHILIPPINE ISLANDS.

Manila.

University of Saint Thomas Medical Department.—The University was founded by a papal decree in 1587, and the medical school was added in 1871. The faculty consists of 19 professors. The course extends over a period of six years of nine months each. The first year is a preparatory one, devoted to the teaching of physics, chemistry and biology. The degree of licenciado is conferred at the conclusion of the fifth year, and the degree of doctorado at the end of the sixth year, during which only special work is done. This last year is optional, the degree of licenciado entitling the holder to all the rights and privileges of the medical practitioner. The degree is equivalent to the English M.B. The Rector of the university is Dr. Fr. Raymundo Vetasquez; the Secretary of the medical department is Lic. Blas C. Alcuaz. Total registration for 1904-5 was 310; given degree of *licenciado*, 26: given M.D., 11. The course began July 2, 1905, and ended March 6, 1906.

SOUTH CAROLINA.

South Carolina, population 1,340,316, has one medical college, situated in Charleston, a city of 56,062 people. Board and room can be obtained for from $12 to $16 a month.

Charleston.

The Medical College of the State of South Carolina.—This school was founded in 1823. The faculty is made up of 10 professors and 10 assistants, etc., 20 in all. The clinical facilities are those offered by the New Roper Hospital, capacity 150 beds and having indoor and outdoor departments, where surgical, obstetrical and medical instruction is given. Applicants for matriculation must show diplomas of graduation from some literary or scientific institution of learning or certificates from some legally constituted high school or evidences of education satisfactory to the faculty. The course covers four years of six months each. The total fees for each of the first two years are $100, and $75 each for the last two. The Dean is Dr. Edward F. Parker. Total enrolment for 1905-6 was 97; graduates, 8. The next session opens Oct. 2, 1906, and closes April 15, 1907.

TENNESSEE.

Tennessee, population 2,020,616, has eleven medical colleges. Of these the Medical Department of the University of Nashville, Vanderbilt University Medical Department, University of Tennessee Medical Department and Meharry Medical College are situated in Nashville, a city with a population of 80,865. The City Hospital, containing 100 beds, is used by all the schools in common for clinical study. Board and lodging cost from $3 to $4 a week.

Knoxville, population 34,344, contains two colleges, Tennessee Medical College and Knoxville Medical College. The cost of room and board in that city is from $2.50 to $4 a week.

Chattanooga Medical College and Chattanooga National Medical College are situated in Chattanooga, a city of 30,469 people. Board and lodging cost there from $2 a week upward.

Memphis Hospital Medical College and the College of Physicians and Surgeons are located in Memphis, population 113,669. Good board can be obtained for from $3 to $4 a week.

The University of West Tennessee is in Jackson, whose population is 15,852.

The other school, the Sewanee Medical College, is located at Sewanee, a mountain town of 600 people.

Nashville.

University of Nashville Medical Department.—This school, established in 1850, has a faculty of 11 professors and 12 lecturers, assistants, etc., in all 23. This school is a member of the Southern Medical College Association. The course of study covers four years of twenty-six weeks each. The tuition for each of the four years is $75. The Dean is Dr. William G. Ewing. Total enrolment for 1905-6 was 298; graduates, 42. The next session begins Oct. 1, 1906, and ends March 29, 1907.

Vanderbilt University Medical Department.—This school was founded in 1874, and in 1895, when the present medical building was completed, the course was extended, the standard raised. The present faculty of 35 consists of 20 professors and 15 lecturers, etc. The school is a member of the Southern Medical College Association. The course covers four years of seven months each. The minimum entrance requirement is a high school diploma or its equivalent. The total fees for the first three years are $105 each and $130 for the fourth year. The Dean is Dr. William L. Dudley. Total enrolment for 1905-6 was 197; graduates, 36. The next session begins on or about Oct. 1, 1906, and ends May 1, 1907.

University of Tennessee Medical Department.—This was organized in 1876 as the Nashville Medical College; its present relations were assumed in 1879. The faculty is composed of 16 professors and 10 lecturers, assistants, etc., 26 in all. The school is a member of the Southern Medical College Association. The course of study includes work for four years of seven months each. The total fees for each of the first three years are $75 and $100 for the fourth year. The Dean is Dr. Paul F. Eve, 614 Broad St. Total enrolment for 1905 6 was 182 students; graduates, 25. The next session begins Oct. 1, 1906, and ends May 1, 1907.

Meharry Medical College.—Colored. This school was organized in 1876 as the Medical Department of Central Tennessee College, now Walden University, "for the purpose of furnishing to the colored people of the South an opportunity of obtaining a medical education." The faculty is made up of 12 professors and 13 instructors, demonstrators, etc., 25 in all. The work embraces a four-year graded course, seven months to the year. The total fees for the first three years are $50 each, and $60 for the fourth year. The Dean is Dr. G. W. Hubbard. Total registration for 1905-6 was 321; graduates, 68. The next session begins Sept. 5, 1906, and ends April 5, 1907.

Knoxville.

Tennessee Medical College.—This school was organized in 1889, and has a faculty of 14 professors and 12 assistants, 26 in all. This school is coeducational. The Tennessee Medical College is now the medical department of the Lincoln Memorial University. A new college building with large and well-filled laboratories has been completed. The Lincoln Memorial Hospital, owned and controlled by the faculty, adjoins the college building and furnishes material for clinical study. This school is a member of the Southern Medical College Association. The curriculum includes graded work for four years of seven months each. Fees: First and second years, $50; third and fourth years, $60; matriculation fee, $5; graduation fee, $25. The Registrar is Dr. E. R. Zemp. Total number of students for 1905-6 was 80; graduates, 19. Next session begins Nov. 1, 1906. and closes about June 1, 1907.

Knoxville Medical College.—Colored. This school was established in 1900, following the discontinuance of the Medical Department of Knoxville College. organized in 1895. The teaching force comprises 12. The course covers four years of seven months each. Fees, $40 per year. The Secretary is Dr. H. M. Green. Total number of students for 1905 6 was 45; graduates, 4. The next session opens Nov. 10, 1906, and closes June 1, 1907.

Chattanooga.

Chattanooga Medical College.—This is the Medical Department of Grant University and was organized in 1889. The faculty consists of 10 professors and 16 instructors, demonstrators, etc., total 26. Adequate clinical facilities are afforded by the wards of Baroness Erlanger Hospital, a county asylum, an outdoor clinic maintained in the college building, and all material furnished by the city physician's office which the faculty desires to utilize. The scholastic requirements are those of the Southern Medical College Association, of which this school was a charter member and to which it belongs. These requirements involve a strictly graded course covering four years of seven months each. The total fees approximate $55 each session. The trustees materially added to the general facilities of the institution by the erection of another fine four-story building of brick and stone for the medical department three years ago, wherein much modern and elaborate equipment has been installed. The Dean is Dr. J. R. Rathmell. The total enrolment for the session of 1905-6 was 267; graduates, 33. The next session opens about Oct. 1, 1906, and ends April 30, 1907.

Memphis.

Memphis Hospital Medical College.—This school, organized in 1878, has a faculty of 10 professors and 18 assistants, beside quiz masters. Excellent clinical facilities are furnished by the City Hospital, Presbyterian Hospital, St. Joseph's Hospital and the East End Dispensary, the latter being located in the college building. The course includes graded work for four years of seven months each. The total fees for the first three years are $75; for the fourth, $100. The Dean is Dr. W. B. Rogers. Total registration for 1905-6 was 492; graduates, 82. The twenty-seventh annual session will begin Oct. 1, 1906, and close April 30, 1907.

College of Physicians and Surgeons.—This college was organized in 1906 and has a faculty of 20. The new building will be ready for the beginning of the first course of lectures, which will start October 1. The Memphis City Hospital is immediately opposite the college building. Access will also be had to St. Joseph's, Presbyterian and Lucy Brinkley hospitals. Laboratories will be well equipped. The course will cover four years of seven months each. The Dean is Dr. Heber Jones, Tennessee Trust Building.

Jackson.

Medical Department of the University of West Tennessed.—Colored. This school, organized in 1900, has a faculty of 10. The course is four years of seven months each. The fees are $40 per year; graduation, $10 extra. Registration for 1905-6 was 40; graduates, 4. The next session opens Sept. 24, 1906, and closes April 24, 1907.

Sewanee.

Medical Department of the University of the South.—This school was organized in 1892 and has a faculty of 21 members. It is a member of the Southern Medical College Association. The required curriculum is four courses of seven months each, with an interval of eleven months between matriculations. The requirements for entrance on the study are a recommendation from two well-known physicians and a certificate of a high school training. The Dean is Dr. J. S. Cain. Total enrolment for 1905-6 was 119; graduates, 28. The fourteenth course opened April 2, 1906, and closes Oct. 30, 1906.

TEXAS.

Texas, population 3,048,710, has seven medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 37,789 inhabitants. Good board and room can be procured for from $15 to $20 a month.

The Medical Department of Fort Worth University is at Fort Worth, population 27,192. The cost of board and room in that city is from $12 to $15 a month.

The Baylor University College of Medicine, the Medical Department of Southwestern University, the College of Physicians and Surgeons and the Physio-Medical College of Texas are situated in Dallas, population 44,159.

The Gate City Medical College is situated in Texarkana, having a population of 5,256.

Dallas.

Baylor University College of Medicine.—This is a new name for the University of Dallas Medical Department, which was organized in 1901. In June, 1903, it became the Medical Department of Baylor University at Waco. In 1905 it merged with the Dallas Medical College. The faculty numbers 20 professors and 16 assistants, total 36. Parland Hospital, with 90 beds; St. Paul's Sanitarium, Baptist Memorial Hospital and a college dispensary and hospital are utilized for clinical study. The course covers four years of seven months each. The school is a member of the Association of Southern Medical Colleges. The fees are $75 for each of the four years, with a matriculation fee of $5, paid once, and a graduation fee of $25. The Dean is Dr. E. H. Cary. Total registration for 1905-6 was 70; graduates, 8. The next session opens Oct. 1, 1906, and closes May 1, 1907.

Southwestern University Medical College.—This is the Medical Department of Southwestern University and was organized in June, 1903. It has a faculty of 17 professors and 14 instructors, total 31. The course of instruction is graded and covers four years in medicine and two in pharmacy. Requirements for admission are equivalent to those prescribed by the Association of American Medical Colleges. The fees are: Matriculation, $5, paid once; annual tuition, $75; graduation, $25. The hospitals represented by the faculty and open for clinical teaching are St. Paul's Sanitarium, City Hospital, Texas Baptist Memorial Hospital, Children's Home. Mission Home, Woman's Home, St. Joseph Orphanage, St. Matthew's Home for Children, Dr. H. K. Leake's Private Infirmary and Outdoor Clinic of the Settlement Home. The Dean is Dr. John O. McReynolds. Total registration, 1905-6, was 85; graduates, 7. The fourth session opens Oct. 1, 1906, and closes May 3, 1907.

College of Physicians and Surgeons.—This school was founded in 1904 as the Bell Medical College, and in 1905 the name was changed to the above. It has a total teaching staff of 15. The course of instruction extends over four years of six months each. The requirements for admission are the same as those prescribed by the Association of Southern Medical Colleges. Clinical instruction is given in the City Hospital, St. Paul Sanitarium and the college dispensary. The fees for the first three years are $80, and $105 for the fourth year. The Dean is Dr. Arthur C. Bell. Total registration for 1905 6 was 95; graduates, 18. The next session begins Oct. 2, 1906, and closes April 3, 1907.

Physio-Medical College of Texas.—This college was organized in 1902. It has a faculty of 22 professors and 4 assistants, total 26. The course is four years of thirty weeks each. The fees are, first year, $70; fourth year, $85; other years, $65. Enrolment, 1905-6, was 47; graduates, 11. The secretary is Dr. R. L. Spann. The next session opens Oct. 15, 1906, and closes May 15, 1907.

Galveston.

University of Texas Medical Department.—This department of the State University was organized in 1891 and has a faculty of 23. The John Sealy Hospital, also having an outdoor department, and St. Mary's Infimary supply good material for clinical study. Requirements for admission: (*a*) Admission Without Examination.—Graduates of approved schools and colleges, graduates of affiliated high schools, holders of first-grade state teachers' certificates and students of approved colleges and universities are admitted without entrance examination. (*b*) Admission on Examination.—Examinations on the following prescribed subjects are required to begin the study of medicine: English, 3½ units; history, 1½ units; algebra, 1½ units, and 1½ units in either geometry, Latin or physics. (A unit is a high-school course pursued for one session.) For full admission credit must be secured in five additional units from elective subjects in languages and sciences if Latin be included, or in six units if Latin be not included. Students who do not secure credit for all the electives at the time of entrance may do so during the summer vacations, but they must do so before they can become candidates for the degree. The curriculum embraces graded work for four years of eight months each. All laboratories are completely equipped. Fees: First year, $50; second and third, each $20, and $5 for the fourth. The Dean is Dr. William S. Carter. Total registration for 1905-6 was 189; graduates, 31. The next session begins Oct. 1, 1906, and ends May 31, 1907.

Fort Worth.

Medical Department of Fort Worth University.—This school was organized in 1894 and has a faculty of 15 professors and 22 lecturers, assistants, etc., in all 37. Clinical facilities are supplied by St. Joseph's Hospital, with 200 beds; the Benevolent Home, containing 75 beds; the Gelia Collins' Rescue Home, having 50 beds, and a college dispensary. The school is a member of the Southern Medical College Association. The course covers four years of seven months each. The total fees for each of the first three years are $75 and $100 for the fourth year. The Dean is Dr. Frank Gray. The total enrolment for 1905-6 was 192; graduates, 23. The next session opens Oct. 3, 1906, and closes May 3, 1907.

Texarkana.

Gate City Medical College.—The length of each course is seven months. The faculty numbers 20 professors and assistants. Registration, 1905-6, was 156; graduates, 40. The Dean is Dr. J. W. Decker. The next session begins Oct. 1, 1906, and ends May 4, 1907.

UTAH.

Utah, population 276,749, has one medical college, situated at Salt Lake City, which has 57,138 people. This college is the Medical Department of the University of Utah, which gives only the first two years of the medical course.

Salt Lake City.

University of Utah Department of Medicine.—This department was organized in 1906 and offers the first two years of the medical course, each year extending over thirty-six weeks. Two courses are offered, a two-year course of the standard medical course leading to a special certificate and a four-year course consisting of two years in the College of Arts, the two years in medicine being counted as the junior and senior years, which gives the A.B. degree and a special certificate. The medical faculty consists of 7 professors and 16 lecturers and assistants. a total of 23. Fees: V. Chamberlin, Ph.D. The enrolment for 1905-6, the first session, was 30. The second session begins Sept. 17, 1906, and ends June 6, 1907.

VERMONT.

Vermont, population 343,641, has one medical school, located at Burlington, a town of 19,885 people. Board and room cost from $3.50 to $5 a week.

Burlington.

University of Vermont College of Medicine.—This school was organized in 1822, but suspended from 1836 until 1854, when it was reorganized. The faculty consists of 21 professors and 21 assistants, instructors, etc., in all 42. The Mary Fletcher Hospital and a free dispensary furnish material for clinical instruction. Applicants for admission must be graduates of a four-year high school course or take an examination to show equivalent educational qualifications. The laboratory and lecture-room space and equipment are good. A new and commodious college building has just been completed and is now in use. The course of study embraces graded work for four years of seven months each. The total fees for each of the first three years are $115 and $140 for the fourth year. The Dean is Dr. H. C. Tinkham; Secretary, H. L. White, A.M. Total registration of students for 1905-6 was 169; graduates, 47. The fifty-fourth session begins Dec. 1, 1906, and ends June 28, 1907.

VIRGINIA.

Virginia, population 1,854,184, has three medical colleges, situated in Charlottesville, population 6,449, and Richmond, population 86,148. The clinical facilities in Richmond are good. Board and room can be obtained for $18 a month and upward in Charlottesville, and from $12 to $20 a month in Richmond.

Charlottesville.

University of Virginia Department of Medicine.—This school was organized in 1827 and has a faculty of 24. A free dispensary and the new four-story hospital furnish clinical facilities. The requirements for admission are those of the Association of American Medical Colleges. The course is four years of nine months each. Fees: First year, $110; second, $100; third, $80, and $60 for the fourth year. The Dean is Dr. R. H. Whitehead. Total enrolment for 1905-6 was 122; graduates, 21. The eighty-second session opens Sept. 13, 1906, and closes June 11, 1907.

Richmond.

Medical College of Virginia.—This school was organized in 1838 as the Medical Department of Hampden Sidney College, Virginia. In 1854 it was granted a charter by the legislature of Virginia as an independent institution under its present name. In 1860 the college and its appurtenances were deeded to the State of Virginia in consideration of an appropriation on the part of the state of a sufficient sum to build a hospital, since which time it has continued as a state institution. During the war between the states it was the only medical college in the Confederacy which did not close its doors. It held two sessions a year during this period, and a large proportion of the surgeons of the Confederate Army were graduates of this school. Clinical material was formerly furnished by the Old Dominion Hospital, but more recently by the Memorial Hospital, opened in July, 1903, and the City Free Dispensary, both of which are under the exclusive control of the college. The State Penitentiary Hospital and other public charities and asylums of the city afford ample opportunity for additional clinical work. This school is a member of the Southern Medical College Association. The buildings are large and numerous and contain well-equipped laboratories and amphitheaters. The course embraces four years of nearly eight months each. The fees are $100 for each year, with an additional graduation fee of $30. The Dean is Dr. Christopher Tompkins. Total registration for 1905-6 was 242; graduates, 45. The next session begins Sept. 25, 1906, and will end May 14, 1907.

University College of Medicine.—This school was organized in 1893 and has a faculty of 19 professors, 41 lecturers, assistants, etc., a total of 60. Good clinical facilities are furnished by Virginia Hospital, with a maternity department and annex, which was built especially for the purpose of affording bedside instruction and is owned and operated by the college; Richmond Eye, Ear and Throat Infirmary, containing 34 beds; the City Hospital, City Jail, State Penitentiary and a college dispensary. Matriculation is in accord with the rules of the Association of American Medical Colleges and of the Southern Medical College Association, to both of which this college belongs. The laboratory and lecture-room space and equipment are ample, and some of the instructors devote their entire time to the laboratories. The school lays especial importance on the careful instruction and guidance of each student. The curriculum covers four years of thirty-four weeks each. The total fees are $100 for each year. The President is Dr. Stuart McGuire; the Dean is Dr. Landon B. Edwards. Total enrolment for 1905-6 was 205; graduates, 20. The next session begins Sept. 25, 1906, and ends May 23, 1907.

WEST VIRGINIA.

West Virginia, population 958,800, has one medical college, College of Medicine of the West Virginia University, located at Morgantown, a city of 1,900 inhabitants.

Morgantown.

West Virginia University College of Medicine.—This school was organized in 1902 and gives only the first two years of the medical course. Each college term extends over nine months. The degree of M.D. is granted students after they finish the third and fourth years in Baltimore at the College of Physicians and Surgeons. The faculty consists of 5 professors and 4 assistants, 9 in all. The school is a member of the Association of American Medical Colleges. Tuition free to students residing in the state; for others, $37.50 per year. Dr. J. N. Simpson is the Dean and A. J. Collett the Secretary. Total registration in 1905-6 was 35. Next session begins Sept. 14, 1906, and closes June 14, 1907.

WISCONSIN.

Wisconsin, population 2,069,042, has two medical colleges, the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons. They are both situated in Milwaukee, a city of 312,736 people. Clinical facilities are furnished them in common by the County Hospital, with 300 beds, and the Milwaukee Hospital for the Insane. Board and lodging can be had for from $3 to $5 a week.

Milwaukee.

Milwaukee Medical College.—This school was organized in 1893 and has a faculty of 36 professors and 27 lecturers, instructors, etc., a total of 63. Good clinical material is furnished by Trinity and the County Hospitals, Milwaukee Hospital for the Insane and a college dispensary. This school is a member of the Association of American Medical Colleges. Ample laboratory and amphitheater facilities are afforded. The course covers four years of eight months each. The total fees are $125 each for the first three years and $135 for the fourth year. The President is Dr. William H. Earles. Total number of students for 1905-6 was 139; graduates, 15. The thirteenth session begins Sept. 18, 1906, and will close about May 14, 1907.

Wisconsin College of Physicians and Surgeons.—This college was organized in 1893 and has a faculty composed of 28 professors and 29 associates, assistants, etc., a total of 57. St. Joseph's Hospital, containing 150 beds; the college dispensary, the Milwaukee County Hospital and the Hospital for the Insane supply facilities for clinical study. The school is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are well equipped. The curriculum includes four years of eight months each. Fees: Matriculation, paid once, $5; general ticket, $100 for the use of the microscope a fee of $2 is charged for each course

The Secretary is Dr. W. H Washburn Total enrolment for 1905 6 was 86; graduates 15 The next session begins Sept. 18, 1906, and ends May 16, 1907.

STANDARDS OF MEDICAL EDUCATION ADOPTED BY THE AMERICAN MEDICAL ASSOCIATION, JULY, 1905.

THE IDEAL STANDARD.

The ideal standard to be aimed at from the present viewpoint should consist of: (a) Preliminary education sufficient to enable the candidate to enter our recognized universities. the passing upon such qualifications by the state authorities (b) A five-year medical course, the first year of which should be devoted to physics, chemistry and biology, and such arrangements should be made that this year could be taken either in a school of liberal arts or in the medical school. Of the four years in pure medical work, the first two should be spent in laboratories of anatomy, physiology, pathology, pharmacology, etc, and the last two in close contact with patients in dispensaries and hospitals in the study of medicine, surgery, obstetrics and the specialties (c) A sixth year as an interne in a hospital or dispensary should then complete the medical course

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age, and would graduate from the hospital interneship at from 24 to 25. A college education is recognized as a desirable preparation for a limited number of men, but it is thought that it is not and never will be desirable to make such college education a requirement to the study of medicine, as it would make the age of graduation from 27 to 28 years. which is regarded as too old a period at which the young medical man should begin his life's work. It is obvious that this very desirable scheme of requirements can not be at once demanded or recommended.

STANDARD NOW RECOMMENDED.

The standard of requirements now recommended prerequisite to the practice of medicine consists of five cardinal points, as follows:

1. Preliminary requirements to be a high school education or its equivalent, such as would admit the student to one of our recognized universities
2. Preliminary requirements to be passed on by a state official, such as the superintendent of public instruction, and not by an official of the medical college.
3. A medical training in a medical college, having four years of not less than thirty weeks each year, of thirty hours per week of actual work.
4. Graduation from an approved medical college required to entitle the candidate to an examination before a state examining board.
5 The passing of a satisfactory examination before a state examining board.

HISTORY.

1. The above standards are the result of three conferences held by the Council on Medical Education of the American Medical Association at Philadelphia, December, 1904; at Chicago, April, 1905, and at Portland, July, 1905.

2. The Chicago meeting was a conference with representatives of (a) state examining and licensing boards, (b) government medical services, (c) associations of medical colleges and of (d) colleges of liberal arts.

3. Standards were reported to the American Medical Association. referred to a special reference committee and later adopted by the Association at the fifty sixth annual session, held at Portland, Ore, July 10 to 14, 1905.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

The requirements for admission and graduation to be maintained by colleges holding membership in this Association and the minimum course of study prescribed are as follows:

ARTICLE III

SECTION 1—Every college holding membership in this Association shall demand of each student under the condition hereinafter stated as a minimum requirement for admission to the medical course:

(a) A bachelor's degree from an approved college or university

(b) A diploma from an accredited high school, normal school or academy requiring for admission evidence of the completion of an eight year course in primary and intermediate grades, and for graduation not less than four years of study embracing not less than two years (4 points) of foreign language, of which one must be Latin, two years (4 points) of mathematics, two years (4 points) of English, one year (2 points) of history, two years (4 points) of laboratory science and six years (12 points) of further credit in language, literature, history or science.

(c) An examination in the following branches:

A. Required (18 points): Mathematics (4 points), English (4 points), History (2 points), Language (2 must be Latin); 4 points, Science (taken from physics, chemistry, botany, zoology), 4 points

B Optional (to 12 points): English, 2 points; History, 6 points, Language, 6 points; Manual Training, 2 points; Mechanical Drawing, 1 point; Natural Science (botany, biology, zoölogy), 2 points; Physical Science (chemistry, physics), 2 points; Trigonometry, 1 point, Astronomy (1), Civics (1), Geology (1), physical Geography (1), Physiology and Hygiene (1), Political Economy (1).

(One point in any subject in a high school or academic course demands not less than five periods per week of forty five minutes each for eighteen weeks)

(d) Certificates from reputable instructors recognized by any state board of medical examiners duly authorized by law or by the superintendents of public instruction in states not having a board of examiners, may be accepted in lieu of any part of this examination.

SEC 2—This examination must be conducted by or under the authority of the board of examiners or of the superintendent of public instruction of the city or state in which the college is located In no case shall it be conducted by any person connected with the faculty, medical or otherwise, of the institution to which the student is seeking admission.

SEC. 3—A student may be allowed to enter on his medical work conditioned in not more than six points, and these conditions must be removed by satisfactory examination before he is allowed to enter on the second year of his medical course.

SEC 4—Colleges in membership in this Association may honor the official credentials presented by students from other colleges having the standard requirements maintained by members of this Association, excepting for the fourth year of their course, but no member of this Association shall admit a student to advanced standing without first communicating with the college from which such student desires to withdraw, and receiving from the dean of such college a direct written communication certifying to the applicant's professional and moral qualifications and to the exact work he has done in said college.

SEC 5—Candidates for the degree of doctor of medicine shall have attended four courses of study in four calendar years, each annual course to have been of not less than thirty teaching weeks' duration, and at least ten months shall intervene between the beginning of any course and the beginning of the preceding course

SEC 6—Credit may be given to the holder of a bachelor's degree from an approved college or university for any work in the medical branches which he has successfully completed in his college course only so far as it is the full equivalent of corresponding work in the medical curriculum The holder of such bachelor's degree may also be given time credits of not exceeding one year, provided that such student has had at least 40 hours in physics, 144 hours in chemistry, 24 hours in osteology, 292 hours in human or comparative anatomy, 124 hours in histology, 85 hours in embryology, 145 hours in physiology and 46 hours in materia medica; provided that the applicant for such time credits satisfies the professors of the chairs mentioned in the medical school as to his proficiency in these first year medical studies, and satisfies the examiner, as provided for in Section 2, Article III, that his studies for which the degree was conferred include the above requirements Such student may be allowed to complete a course for the medical degree in not less than 31 months, provided he completes the remainder of the medical curriculum in that time

SEC 7—A college which gives less than a four years' course of study, but does not graduate students and is possessed of other required qualifications, may be admitted to membership

SEC 8—Each student shall be obliged to attend 80 per cent of the exercises in every annual course of study for which he seeks credit No student shall be given credit on examination unless he attains a grade of at least 70 per cent. or its equivalent in any other marking system And no student shall be graduated unless he shall have attained a passing grade in each and all subjects of the required curriculum

ARTICLE V

SECTION 1—The entire course of four years shall consist of at least 4.000 hours, divided into the subjects as shown in the following table, and no college shall be recognized that falls below this standard over 20 per cent in any one branch or over 10 per cent. in the total Laboratory or clinic hours may be substituted for didactic hours

CURRICULUM

	No of Hours of Lectures	Hours of Laboratory	Hours of Clinics	Total
Histology	30	60		90
Embryology	30	60	.	90
Osteology ..	30			30
Anatomy	190	230		420
Physiology .	180	120		300
Chemistry and Toxicology	100	200		300
Materia Medica	40	20	.	60
Pharmacology .	40	20	.	60
Therapeutics	90		.	90
Bacteriology .	40	100		140
Pathology	100	140		240
Medical Zoology Postmortem Work and Clinical Microscopy	30	60		90
Physical Diagnosis	20	..	80	100
Practice of Medicine	180	.	360	540
Surgery ..	180		360	540
Obstetrics . .	100	.	60	160
Gynecology	50	.	110	160
Pediatrics .	40	..	60	100
Eye and Ear	30	..	30	60

Continued on page 632.

Name and Location of College.	Population of city in which college is located.	Number of students registered session of 1905-6. Men.	Number of students registered session of 1905-6. Women.	Graduates 1906 Men.	Graduates 1906 Women.	Total number of teachers	Weeks in college year.	Total graduates all colleges in state 1906.	Total students in all colleges in state 1905-6
ALABAMA								37	230
Birmingham Med. Coll., Birmingham.—R.	42,087	72	...	8	..	28	24	...	...
Medical College of Alabama, Mobile.—R.	40,686	158	...	29	..	17	24	...	...
ARKANSAS								26	176
Arkansas University, Little Rock.—R.	42,036	175	1	26	..	38	28	...	...
CALIFORNIA.								128	563
Cooper Med. Coll., San Francisco.—R.	355,919	117	19	23	7	61	35	...	...
University of California, San Francisco.—R.	355,919	81	9	17	2	62	36	...	...
California Medical College, San Francisco.—E†	355,919	†	...	10	..	26	30	...	...
Hahnemann Medical College, San Francisco.—H.	355,919	23	1	4	..	32	33	...	...
College of P. and S., San Francisco.—R.	355,919	131	14	25	5	43	32	...	...
Oakland Coll. of Med. and Surg., Oakland.—R.	70,386	8	2	4	..	27	35	...	...
University of Southern California, Los Angeles.—R.	116,420	117	10	27	1	55	32	...	...
College of P. and S., Los Angeles.—R.	116,420	28	3	3	..	36	32	...	...
COLORADO								47	193
Denver and Gross Coll. of Med., Denver.—R.	144,588	91	9	24	2	76	33	...	...
Denver Homeo. Coll., Denver.—H.	144,588	13	10	3	2	32	32	...	...
Colorado School of Medicine, Boulder.—R.	6,150	62	8	14	2	27	36	...	...
CONNECTICUT.								25	134
Yale University Med. Dept., New Haven.—R.	114,600	134	...	25	..	64	36	...	...
DISTRICT OF COLUMBIA								100	539
George Washington University, Washington.—R.	293,217	280	...	51	..	79	33	...	...
Georgetown University, Washington.—R.	293,217	*102*	...	20	..	73	32	...	...
Howard University Medical Dept., Washington.—R.	293,217	145	12	28	1	33	32	...	...
GEORGIA								118	569
Atlanta College of P. and S., Atlanta.—R.	96,550	180	...	52	..	33	26	...	...
Atlanta School of Medicine, Atlanta.—R.	96,550	220	...	21	..	38	28	...	...
Georgia Coll. of Ecl. Med. and Surg., Atlanta.—E.	96,550	56	1	15	..	14	23	...	...
University of Georgia, Augusta.—R.	41,283	113	...	30	..	25	28	...	...
ILLINOIS.								743	3,199
American Med. Missionary Coll., Chicago.—R.	1,873,880	53	27	16	7	28	36	...	...
Bennett Coll. of Ecl. Med. and Surg., Chicago.—E.	1,873,880	145	21	48	4	52	29	...	...
Coll. of Med. and Surg., Chicago.—Ph.M.	1,873,880	30	10	4	1	43	30	...	...
College of P. and S., Chicago.—R.	1,873,880	513	43	196	14	198	33	...	...
Hahnemann Med. Coll., Chicago.—H.	1,873,880	178	...	47	11	80	31	...	...
Hering Medical College, Chicago.—H.	1,873,880	48	...	12	2	55	32	...	...
Illinois Med. Coll., Chicago.—R.	1,873,880	187	5	48	..	50	28	...	...
Jenner Med. Coll., Chicago.—*	1,873,880	230	20	37	1	53	38	...	...
Northwestern University, Chicago.—R.	1,873,880	580	..	125	..	116	34	...	...
Rush Medical College, Chicago.—R.	1,873,880	428	22	79	4	254	34	...	...
National Medical University, Chicago	1,873,880	234	15	26	3	75	36	...	...
American Coll. of Med. and Surg., Chicago.—R.	1,873,880	178	11	21	2	65	30	...	...
Dearborn Med. Coll., Chicago.—R*	1,873,880	208	13	34	1	42	39	...	...
INDIANA								134	403
Indiana Medical College, Indianapolis.—R.	191,033	328	11	117	5	97	32	...	...
Physio-Med. Coll. of Indiana, Indianapolis.—Ph.M.	191,033	20	3	4	2	34	28	...	...
Eclectic Med. Coll. of Indiana, Indianapolis.—E.	191,033	20	...	6	..	24	28	...	...
Indiana Univ. School of Med., Bloomington.—R.	5,000	21	...	...	..	16	35	...	...
IOWA.								133	637
Drake Univ. Coll. of Med., Des Moines.—R.	65,754	74	7	10	..	50	35	...	...
Keokuk Med. Coll. of P. and S., Keokuk.—R.	14,803	163	7	48	2	28	30	...	...
Sioux City Coll. of Med., Sioux City.—R.	31,701	72	...	12	2	26	36	...	...
State Univ. of Iowa, Homeo. Dept., Iowa City.—H.	7,987	46	1	8	..	24	36	...	...
State Univ. of Iowa, Med. Dept., Iowa City.—R.	7,987	258	9	49	2	28	36	...	...
KANSAS								75	252
Kansas Medical College., Topeka.—R.	35,388	86	4	17	1	40	30	...	...
School of Med., Univ. of Kansas, Kansas City.—R.	55,348	157	5	55	2	109	34	...	...
KENTUCKY								238	1,392
Hospital College of Medicine, Louisville.—R.	215,945	338	...	94	..	58	28	...	...
Kentucky School of Med., Louisville.—R.	215,945	270	5	47	1	47	28	...	...
Louisville Medical College, Louisville.—R.	215,945	216	...	54	..	30	26	...	...
Louisville National Med. Coll., Louisville.—R.	215,945	49	1	7	..	32	30	...	...
Southwestern Homeo. Med. Coll., Louisville.—H.	215,945	16	...	6	..	27	28	...	...
University of Louisville, Louisville.—R.	215,945	213	...	47	..	36	28	...	...
Kentucky University, Louisville.—R.	215,945	284	...	82	..	42	28	...	...
LOUISIANA.								110	512
Flint Medical College, New Orleans.—R.	300,625	53	1	8	..	16	26	...	...
Tulane University, New Orleans.—R.	300,625	458	...	102	..	59	26	...	...
MAINE.								17	82
Medical School of Maine, Portland.—R.	52,656	82	...	17	..	34	32	...	...
MARYLAND.								372	1,564
Baltimore Medical College, Baltimore.—R.	513,313	441	...	97	..	58	32	...	...
Baltimore Univ. School of Med., Baltimore.—R.	513,313	18	...	7	..	24	34	...	...
College of P. and S., Baltimore.—R.	513,313	298	...	65	..	50	32	...	...
Johns Hopkins University, Baltimore.—R.	513,313	268	25	76	8	82	33	...	...
Southern Homeo. Med. Coll., Baltimore.—H.	513,313	13	5	3	2	24	28	...	...
University of Maryland, Baltimore.—R.	513,313	339	...	83	..	60	32	...	...
Woman's Med. College, Baltimore.—R.	513,313	...	33	...	2	32	32	...	...
Maryland Med. College, Baltimore.—R.	513,313	124	...	29	..	44	30	...	...
MASSACHUSETTS.								185	901
Boston University School of Med., Boston.—H.	594,618	75	25	19	4	59	32	...	...
College of P. and S., Boston.—R.	594,618	122	12	20	..	45	36	...	...
Harvard University Med. School, Boston.—R.	594,618	292	...	69	..	145	36	...	...
Tufts Medical College, Boston.—R.	594,618	327	48	56	17	85	33	...	...
MICHIGAN.								218	772
Detroit College of Medicine, Detroit.—R.	309,653	173	...	82	..	84	33	...	...
Detroit Homeo. Med. Coll., Detroit.—H.	309,653	26	7	12	3	36	28	...	...
Mich. Coll. of Med. and Surg., Detroit.—R.	309,653	72	3	21	1	57	30	...	...
Grand Rapids Med. College, Grand Rapids.—R.	91,630	36	4	11	1	33	28	...	...
Univ. of Mich. Dept. of Med., Ann Arbor.—R.	16,033	347	22	64	6	59	36	...	...
Univ. of Mich. Homeo. Dept., Ann Arbor.—H.	16,033	82	...	15	2	50	36	...	...
MINNESOTA.								71	324
Univ. of Minn., Homeo. Dept., Minneapolis.—H.	214,112	14	1	...	1	33	35	...	...
Univ. of Minn., Dept. of Med., Minneapolis.—R.	214,112	185	4	42	1	101	35	...	...
Hamline University, Minneapolis.—R.	214,112	116	4	25	2	47	34	...	...
MISSISSIPPI.								...	22
University of Mississippi, Oxford.—R.	2,000	22	...	...	..	8	34	...	...

* Evening Colleges. † Records destroyed by fire April 18, 1906.

NAME AND LOCATION OF COLLEGE.	Population of city in which college is located.	Number of students registered session of 1905-6.		Graduates 1906.		Total number of graduates.	Weeks in college year.	Total graduates all colleges in state 1906.	Total students in all colleges in state 1905-6.
		Men.	Women.	Men.	Women.				
MISSOURI.								454	1,910
Univ. Med. Coll., Kansas City.—R.	173,064	235	...	54	..	70	30	...	...
Kansas City Hahn. Med. Coll., Kansas City.—H.	173,064	71	5	19	2	38	28	...	...
Eclectic Med. Univ., Kansas City.—E.	173,064	40	6	15	1	25	26	...	...
Ensworth Central Med. Coll., St. Joseph.—R.	110,479	149	...	34	..	41	28	...	...
Barnes Med. Coll., St. Louis.—R.	612,279	356	29	67	5	60	31	...	...
St. Louis University, St. Louis.—R.	612,279	295	...	115	..	106	30	...	...
St. Louis College of P. and S., St. Louis.—R.	612,279	278	...	53	..	46	30	...	...
Amer. Med. Coll., St. Louis.—E.	612,279	57	6	19	3	17	28	...	...
Homeo. Med. Coll. of Missouri, St. Louis.—H.	612,279	46	...	4	..	32	29	...	...
Washington University, St. Louis.—R.	612,279	239	...	55	..	76	32	...	...
Univ. of Missouri, Columbia.—R.	5,651	94	4	6	2	28	34	...	...
NEBRASKA.								61	395
University of Nebraska, Omaha.—R.	113,361	134	8	6	1	60	32	...	...
Creighton Medical College, Omaha.—R.	113,361	169	3	30	..	55	32	...	...
Lincoln Med. College, Lincoln.—E.	44,243	63	8	14	1	22	29	...	...
Nebraska College of Medicine, Lincoln.—R.	44,243	10	...	...	..	81	34	...	...
NEW HAMPSHIRE.								10	59
Dartmouth Medical College, Hanover.—R.	1,884	59	...	10	..	21	30	...	...
NEW YORK.								487	2,421
Albany Medical College, Albany.—R.	93,920	165	...	33	..	80	29	...	...
College of P. and S., New York.—R.	3,716,139	450	...	152	..	208	34	...	...
Cornell University, New York.—R.	3,716,139	345	24	53	6	207	34	...	...
Eclectic Medical College, New York.—E.	3,716,139	88	17	13	2	33	28	...	...
Long Island College Hospital, New York.—R.	3,716,139	343	...	72	..	95	32	...	...
New York Homeo. Med. College, New York.—H.	3,716,139	110	...	30	..	89	29	...	...
New York Woman's Med. Coll., New York.—H.	3,716,139	...	20	...	6	38	29	...	...
University and Bellevue Med. Coll., New York.—R.	3,716,139	481	...	53	..	108	32	...	...
Syracuse University, Syracuse.—R.	114,443	144	9	21	2	65	33	...	...
University of Buffalo, Buffalo.—R.	381,403	214	11	40	4	92	33	...	...
NORTH CAROLINA.								68	355
Leonard Medical School, Raleigh.—R.	13,934	147	...	33	..	10	28	...	...
University of North Carolina, Raleigh.—R.	13,934	96	...	11	..	37	35	...	...
North Carolina Med. Coll., Charlotte.—R.	20,050	92	...	24	..	24	35	...	...
Wake Forest School of Med., Wake Forest.—R.	823	20	...	...	..	10	35	...	...
NORTH DAKOTA.								...	7
University of North Dakota, University.—R.	....	7	...	...	..	12	34	...	...
OHIO.								224	815
Western Reserve University, Cleveland.—R.	414,950	85	...	12	..	56	33	...	...
Cleveland Coll. of P. and S., Cleveland.—R.	414,950	81	7	18	4	61	30	...	...
Cleveland Homeo. Med. Coll., Cleveland.—H.	414,950	43	7	11	3	51	30	...	...
Eclectic Med. Institute, Cincinnati.—E.	332,934	111	5	35	..	29	28	...	...
Medical College of Ohio, Cincinnati.—R.	332,934	133	4	33	..	75	32	...	...
Pulte Med. Coll., Cincinnati.—H.	332,934	10	3	3	..	34	30	...	...
Miami Medical College, Cincinnati.—R.	332,934	75	3	21	3	51	32	...	...
Ohio Medical University, Columbus.—R.	135,487	135	7	39	3	36	31	...	...
Starling Med. College, Columbus.—R.	135,487	86	...	30	..	39	31	...	...
Toledo Med. College, Toledo.—R.	145,901	20	...	9	..	31	30	...	...
OKLAHOMA.								...	32
University of Oklahoma, Norman.—R.	3,682	16	...	...	..	10	36	...	...
Epworth Univ. Med. Dept., Oklahoma City.—R.	12,800	14	2	...	..	23	29	...	...
OREGON.								31	132
University of Oregon, Portland.—R.	98,655	70	12	16	..	36	30	...	...
Willamette University, Salem.—R.	4,258	50	...	15	..	19	28	...	...
PENNSYLVANIA								440	2,391
Temple Coll. of Med., Philadelphia.—R.*	1,367,716	94	7	12	2	50	35	...	...
University of Pennsylvania, Philadelphia.—R.	1,367,716	577	...	103	..	145	35	...	...
Hahnemann Medical College, Philadelphia.—H.	1,367,716	186	...	52	..	74	32	...	...
Jefferson Medical College, Philadelphia.—R.	1,367,716	617	...	200	..	113	33	...	...
Woman's Medical College, Philadelphia.—R.	1,367,716	...	136	...	25	47	31	...	...
Medico-Chirurgical Coll., Philadelphia.—R.	1,367,716	467	...	...	..	84	33	...	...
Western Pennsylvania Med. Coll., Pittsburg.—R.	345,043	300	7	45	1	104	33	...	...
PHILIPPINE ISLANDS.								37	310
San Tomaso University, Manila.—R.	150,000	310	...	37	..	19	32	...	...
SOUTH CAROLINA.								6	99
Med. Coll. of South Carolina, Charleston.—R.	56,062	97	2	6	..	20	26	...	...
TENNESSEE.								341	2,043
Tennessee Med. College, Knoxville.—R.	34,344	79	3	18	1	26	28	...	...
Knoxville Medical College, Knoxville.—R.	34,344	45	...	4	..	12	26	...	...
University of Nashville, Nashville.—R.	82,711	298	...	42	..	23	24	...	...
Vanderbilt University, Nashville.—R.	82,711	197	...	36	..	32	28	...	...
University of Tennessee, Nashville.—R.	82,711	182	...	25	..	24	28	...	...
Meharry Medical College, Nashville.—R.	82,711	305	16	64	4	26	28	...	...
Memphis Hospital Med. Coll., Memphis.—R.	113,669	492	...	82	..	32	28	...	...
University of the South, Sewanee.—R.	440	119	...	28	..	21	29	...	...
Chattanooga Medical College, Chattanooga.—R.	30,469	265	2	32	1	28	27	...	...
University of West Tennessee, Jackson.—R.	15,852	40	...	4	..	10	28	...	...
TEXAS.								136	834
Fort Worth University, Fort Worth.—R.	27,192	190	2	24	..	33	28	...	...
University of Texas, Galveston.—R.	31,742	182	7	30	1	23	32	...	...
Baylor University, Dallas.—R.	44,159	69	1	8	..	31	28	...	...
Physio-Med. Coll. of Texas, Dallas.—Ph.M.	44,159	41	6	11	..	26	28	...	...
Southwestern University Med. Coll., Dallas.—R.	44,159	81	4	4	..	31	28	...	...
College of P. and S., Dallas.—R.	44,159	89	6	18	..	15	28	...	...
Gate City Med. Coll., Texarkana.—R.	5,256	156	...	40	..	20	25	...	...
UTAH.								...	30
Univ. of Utah, Dept. of Med., Salt Lake City.—R.	57,138	30	...	...	..	23	35	...	...
VERMONT.								47	170
Univ. of Vermont, Burlington.—R.	19,855	170	...	47	..	43	27	...	...
VIRGINIA.								86	569
Medical College of Virginia, Richmond.—R.	86,148	242	...	45	..	48	30	...	...
University College of Medicine, Richmond.—R.	86,148	205	...	20	..	60	32	...	...
University of Virginia, Charlottesville.—R.	6,449	122	...	21	..	28	35	...	...
WEST VIRGINIA.								...	35
University of West Virginia, Morgantown.—R.	....	35	...	...	..	9	36	...	...
WISCONSIN.								30	225
Milwaukee Medical College, Milwaukee.—R.	312,736	133	6	15	..	63	31	...	...
Wisconsin Coll. of P. and S., Milwaukee.—R.	312,736	84	2	14	1	57	31	...	...

* Evening College.

TABLE 2—SHOWING DISTRIBUTION

NAME OF COLLEGE.	Alabama, 569.	Arizona, 9.	Arkansas, 463.	California, 393.	Colorado, 161.	Connecticut, 274.	Delaware, 54.	Dist. Colum., 132.	Florida, 107.	Georgia, 576.	Idaho, 41.	Illinois, 2,383.	Indian Ter., 140.	Indiana, 815.	Iowa, 828.	Kansas, 473.	Kentucky, 891.	Louisiana, 489.	Maine, 175.	Maryland, 414.	Mass., 923.
Birmingham Medical College.—R	68																	1			
Medical College of Alabama.—R	137								1												
Medical Department Arkansas University.—R		1	156										9					2			
Cooper Medical College.—R	1		1	82								2		1	3	1			3		2
Med. Dept. Univ. of California.—R				58							1	1			3	1	1			2	1
California Medical College.—E																					
Hahnemann Medical Coll. of the Pacific.—H				20																	
College of Phys. and Surg., San Francisco.—R				110	1			1				2		1	1						2
Oakland Coll. of Med. and Surgery.—R				9						1											
Coll. of Med., Univ. of So. California.—R	1	1	1	26	4	1					1	6		6	6	2	2		2	4	3
College of Phys. and Surg., Los Angeles.—R		1		8										2	1	3	1				
Denver and Gross Coll. of Medicine.—R					48							11		1	2	3				1	1
Denver Homeopathic College.—H					16						1			1			1				
Colorado School of Medicine				2	38						1	3		2	3				3		
Yale University, Department of Medicine.—R						86		1				1			2				1		15
George Washington Univ., Dept. of Med.—R	1			3	2	5		50	2	3		10		6	3	2	5	6	3	17	5
Georgetown Univ., School of Medicine.—R						4	2	22				1		1	1			1	1	2	14
Howard University, Medical Department.—R	2						1	30	3	8		3		2	1	3		3		6	
Atlanta College of Phys. and Surg.—R	22		1						6	123							2	3			
Atlanta School of Medicine.—R	26								13	152								1			
Georgia Coll. of Eclectic Med. and Surg.—E	6								4	42			1								
Medical College of Georgia.—R					1				2	92											1
American Medical Missionary College.—R				4		1						2		1	5	3		1	1		
Bennett Coll. of Eclectic Med. and Surg.—E			3	1	1	1	1				1	68		12	4	2	3				
Illinois Medical College.—R	1		2							1	1	62	1	32	3	1	2	1			
College of Medicine and Surgery.—Ph.M	1											17			5						
College of Physicians and Surgeons.—R			1	1	3			1	1	1	2	316	1	27	30	10	3	3	1		
Hahnemann Med. Coll. and Hospital.—H				1								80		15	12	11	1				1
Hering Medical College.—H						1	2	1				23		2	3	2				1	
Jenner Medical College.—R												250									
Northwestern University Med. School.—R				3	5						6	303		21	52	9	1	2			
Rush Medical College.—R	1	3	2	9	2						2	164	1	40	39	11	3	1			1
National Medical University												249									
American Coll. of Med. and Surgery.—R			1	1								51		29	9		2				1
Dearborn Medical College.—R												221									
Indiana Medical College.—R												13		295	1		1				
Physio-Medical College of Indiana.—Ph.M												1		15			1				
Eclectic Medical College of Indiana.—E														20							
Indiana University School of Medicine.—R														21							
Drake University Coll. of Medicine.—R					2							2		1	60	4					
Keokuk Med. Coll. of Phys. and Surgs.—R				1							1	35			93	6					
Sioux City Coll. of Med.—R												3		1	45						
State Univ. of Iowa, Homeo. Med. Dept.—H												2			38	1					
State Univ. of Iowa. Med. Department.—.R					2							4			242						1
Kansas Medical College.—R					1								1	1		77					
School of Medicine, Univ. of Kansas.—R					1							2			2	111	1				
Hospital College of Medicine.—R			4	2								10	1	31	1		222	7			1
Kentucky School of Medicine.—R	2	1	6						3	4	4	5		25			123	7			2
Louisville Medical College.—R.*	8		4		1				3	5		2	6	18	2	8	46	8			
Louisville National Medical College.—R									1	2			1	5			36				
Southwestern Homeopathic Med. College.—H																	16				
Medical Dept. Univ. of Louisville.—R	2		4		1	1						4	2	21	2	2	111	4			
Kentucky University Medical Dept.—R	7		4						2	4		3	1	28	4	1	136	3	1		1
Flint Med. Coll. of New Orleans Univ.—R	1		1							1								33			
Tulane University, Medical Department.—R	43		15						3	9			1					216			
Medical School of Maine, Bowdoin Coll.—R																			74		6
Baltimore Medical College.—R	5			4		33		1	2	6		2		1	1			2	15	56	61
Baltimore Univ. School of Medicine.—R	1									1										9	2
College of Phys. and Surgs. of Baltimore.—R	3		1			13	2		1	4				2					3	41	22
Johns Hopkins Medical School.—R	7		4	11	2	17	1	4	3	7		3		5	11	2	3		8	50	6
Southern Homeopathic Medical College.—H							2	1									1			6	
Woman's Medical College of Baltimore.—R						2				1				2						13	
University of Maryland, School of Med.—R			1			6	5		5	9				2		1	1		2	131	6
Maryland Medical College.—R	2					4	2	1	1	1		1	1	1				1	2	43	2
Boston University School of Medicine.—H				1		1		1	1					1				1	5		55
College of Physicians and Surgeons.—R						4	3			1								1	5		85
Harvard University Medical School.—R	1		1	6	3	2						5			1	1	2		6	1	193
Tufts College Medical School.—R	1					3													12		313
Detroit College of Medicine.—R								1			1			3			1				
Detroit Homeopathic Medical College.—H														1							
Michigan College of Med. and Surgery.—R														2							
Grand Rapids Medical College.—R																					
Univ. of Michigan Dept. of Med. and Surg.—R	2			3	2	1			1	1	2	23		28	9	1	4				2
Univ. of Mich., Homeo. Med. College.—H												2		3							
Coll. of Hom. Med. and Surg., U. of Minn.—H																					
College of Med. and Surg., Univ. of Minn.—R						1						1			2						
Medical Dept. of Hamline Univ.—R																					
Med. Dept., Univ. of Mississippi, Oxford.—R																					
Medical Department, Washington Univ.—R	1		9		2						1	55	3	1	1	2	1			1	
Univ. Med. Coll. of Kansas City.—R		1		1	6							7	6		4	85		1			
Kansas City Hahnemann Med. Coll.—H									1			5		2	3	23	2				
Nebraska College of Medicine.—R																					
Eclectic Medical University.—E				1									1			1	10				
Ensworth Central Medical College.—R					1						1	3	1		12	28					
Barnes Medical College.—R	1		12	1	2						4	84	7	3	5	9	6	1	1		1
Marion-Sims-Beaumont Coll. of Med.—R			6		1						1	90	1	5	8	13	1	1		1	1
St. Louis Coll. of Phys. and Surgs.—R			6		2					1		90	6	3	18	1	5				
American Medical College.—E*			8	1	1						1	6						1			
Homeo. Med. College of Missouri.—H			3									12		3	3	1					
Dept. of Med. of the Univ. of Missouri			1		1		1					3		1	4	2	1				
Univ. of Nebraska Coll. of Med.—R			1			1									6						
John A. Creighton Med. College.—R				1							1	1		1	37	2	1				
Lincoln Med. Coll. of Cotner University.—E												2			1	5					
Dartmouth Medical College.—R						7		1				1							5		15
Albany Medical College.—R							1														2

---

*Totals exact; distribution based on that of last year.

Michigan, 589.	Minnesota, 391.	Mississippi, 624.	Missouri, 1,087.	Montana, 37.	Nebraska, 406.	N. Hamp., 107.	New Jersey, 499.	New Mexico, 23.	New York, 2,361.	Nevada, 23.	N. Carolina, 192.	N. Dakota, 61.	Ohio, 973.	Oklahoma, 115.	Oregon, 161.	Penna., 2,115.	R. Island, 104.	S. Carolina, 273.	S. Dakota, 79.	Tennessee, 689.	Texas, 1,026.	Utah, 101.	Vermont, 127.	Virginia, 582.	Washington, 105.	W. Virginia, 358.	Wisconsin, 499.	Wyoming, 9.	Foreign, 551.	P. Is., Ha., P. R., 325.	Total, 25,204.
...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	72
...	...	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	158
...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	...	...	...	...	...	1	...	...	...	176
...	3	...	1	...	...	...	...	...	3	5	...	...	2	...	5	3	1	...	1	...	1	2	...	...	...	...	...	...	15	...	138
2	1	...	...	1	...	...	...	...	2	4	...	...	2	...	1	...	...	...	...	...	...	...	...	...	2	...	...	...	7	...	90
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	24
...	...	...	...	1	1	...	...	...	1	...	...	...	...	...	6	...	...	...	...	...	...	6	...	...	5	...	...	...	8	2	146
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
3	2	...	4	...	3	...	4	...	6	...	...	...	5	...	4	3	...	...	...	...	2	...	1	2	4	...	3	...	15	...	127
...	...	...	4	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	6	...	31
...	...	1	3	...	2	...	1	2	4	...	...	...	2	...	...	5	...	...	1	...	...	1	1	...	1	1	4	...	4	...	100
1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	23
1	2	1	...	...	...	...	1	...	3	...	1	...	3	...	...	1	...	...	...	1	...	...	...	...	1	...	...	...	3	...	70
1	...	...	...	...	1	...	1	...	9	...	...	...	...	...	2	1	1	1	...	...	...	...	2	...	...	...	1	...	8	...	134
5	2	3	6	...	3	2	7	...	20	...	16	1	7	3	1	12	...	4	1	2	6	5	1	28	...	4	3	...	5	...	280
2	...	...	...	...	...	1	...	...	12	...	...	1	1	...	...	12	10	...	...	...	...	...	...	6	...	3	1	...	3	1	102
...	...	2	1	...	...	...	1	...	3	...	4	...	2	...	...	11	2	10	...	5	4	...	...	18	...	5	...	...	27	...	157
...	...	6	...	...	...	...	...	...	1	...	5	...	...	...	...	...	...	7	...	...	2	...	...	...	...	...	...	...	2	...	180
...	...	6	...	...	...	...	...	...	...	...	9	...	...	...	...	...	...	9	...	...	...	4	...	...	...	...	...	...	...	...	220
...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	57
...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	14	...	...	...	...	...	2	...	...	...	...	...	...	113
14	1	...	1	...	2	...	1	...	2	...	1	...	7	...	2	3	1	...	1	1	...	...	1	...	...	2	2	...	20	...	80
6	6	1	3	...	7	...	...	...	5	...	...	...	8	...	3	12	...	...	2	...	1	1	...	...	...	...	8	...	6	...	166
5	1	3	1	...	1	...	...	...	1	...	...	4	7	...	...	1	...	...	...	1	4	2	...	...	1	5	6	...	2	...	152
2	3	...	2	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	2	...	5	...	40
12	15	2	9	7	...	...	...	...	3	10	1	1	15	...	2	...	...	2	6	1	4	1	...	...	5	...	54	...	5	...	556
10	3	1	1	...	3	...	...	...	5	...	...	...	6	...	...	2	...	...	2	...	...	1	...	2	3	...	10	...	8	...	178
2	1	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1	1	...	...	...	4	...	48
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	250
18	13	1	4	1	11	...	2	1	2	...	2	10	11	...	7	2	...	...	13	2	4	5	...	...	5	2	55	...	7	...	580
13	11	2	9	3	10	1	...	1	4	...	...	7	20	3	3	4	...	...	2	2	7	2	...	...	5	...	45	1	10	6	450
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	249
16	8	...	2	3	5	...	...	...	4	...	...	2	18	...	1	11	1	...	1	...	...	2	...	...	2	3	10	...	6	...	189
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	221
2	...	...	...	1	...	...	...	...	1	...	...	...	19	...	...	1	...	...	1	1	1	...	...	...	...	...	2	...	...	...	339
...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	23
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21
...	1	...	3	1	1	...	...	...	2	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	81
1	3	...	16	...	1	...	1	...	...	...	1	1	...	2	...	...	...	...	2	...	...	...	...	...	...	1	4	...	1	...	170
...	1	...	...	...	12	...	...	...	...	...	...	...	2	...	...	1	...	...	6	...	...	...	...	...	...	...	1	...	...	...	72
1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...	...	...	47
1	3	...	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	6	...	...	...	...	...	1	...	4	...	...	...	267
...	...	...	2	...	...	...	...	1	...	...	...	1	...	1	...	1	...	...	...	...	1	1	...	...	2	...	...	...	...	...	90
1	...	...	31	...	1	...	...	...	...	...	...	...	1	8	...	1	...	...	...	...	...	...	...	...	1	...	...	...	1	...	162
1	1	9	3	1	...	...	...	...	...	...	...	...	4	...	...	2	...	...	...	5	9	...	...	9	1	12	...	...	2	...	338
3	4	2	9	1	2	1	4	...	3	1	2	...	8	...	...	3	...	...	...	5	20	...	4	...	3	15	2	...	1	...	275
1	...	22	3	...	...	...	...	1	4	...	3	...	5	4	...	5	...	2	...	4	26	...	...	4	1	18	1	...	1	...	216
...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	1	1	...	...	...	...	...	...	...	...	...	50
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16
2	...	3	9	...	1	...	1	...	2	...	...	...	4	...	...	1	...	2	...	6	12	...	...	2	2	12	...	...	...	...	213
...	...	7	13	...	1	...	1	...	5	...	1	...	8	...	...	6	...	4	1	4	1	...	...	4	1	32	...	...	...	...	284
...	...	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	2	...	54
...	...	82	...	...	...	...	...	1	...	...	2	...	1	3	...	...	...	2	...	3	72	...	...	...	1	...	...	...	4	...	458
...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	82
1	...	...	...	...	2	13	30	1	53	...	6	1	7	...	1	60	[illegible]	2	...	1	1	...	6	10	1	22	1	...	25	...	441
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	1	...	1	...	...	...	...	18
...	1	2	...	...	...	...	18	...	22	...	11	...	14	...	...	42	12	2	...	2	1	14	...	7	...	40	...	...	18	...	298
3	2	2	4	...	3	4	9	...	24	...	9	2	10	...	5	30	2	3	1	1	5	1	1	9	1	4	14	...	...	...	203
...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	1	...	...	...	...	18
...	...	...	...	...	...	...	2	...	1	...	2	...	...	...	...	5	...	...	...	...	...	...	...	1	...	1	1	...	2	...	33
...	...	...	...	...	...	...	8	1	17	...	42	...	2	...	...	13	2	19	1	...	...	...	...	24	...	20	...	...	21	...	339
...	...	1	1	...	...	...	4	...	8	...	2	...	3	...	...	12	1	5	...	1	2	...	...	5	...	10	...	...	7	...	124
1	...	...	...	...	...	3	1	...	7	...	...	...	...	...	1	5	7	...	...	...	...	...	2	1	...	...	...	...	6	...	100
...	...	...	...	...	...	3	...	...	10	...	1	...	1	...	...	...	5	1	...	1	...	...	...	1	...	...	...	...	12	...	134
2	3	...	1	...	1	7	1	...	8	...	...	...	6	...	...	3	19	...	...	1	...	...	2	1	...	1	1	...	8	...	287
...	1	...	...	...	...	22	1	...	1	...	...	...	1	...	...	1	9	...	...	1	...	...	4	...	...	...	...	1	4	...	375
118	...	...	...	...	1	...	1	...	2	...	...	1	5	...	...	1	...	...	...	1	...	...	2	...	...	...	3	...	31	1	173
21	...	...	...	...	...	...	...	...	6	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	33
56	...	...	1	...	...	...	...	...	8	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	5	...	75
40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	40
161	4	...	4	4	2	...	...	1	27	...	2	3	33	...	...	18	...	...	4	...	4	2	3	2	2	1	6	...	6	1	369
35	...	...	1	...	1	...	1	...	16	...	...	...	8	...	...	8	...	...	2	...	...	...	...	...	...	...	...	...	5	...	82
...	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15
...	156	...	...	...	1	...	...	...	...	...	...	12	...	...	...	...	...	...	3	...	1	...	...	...	1	...	11	...	...	...	189
...	96	...	...	2	...	...	...	...	1	...	...	6	1	...	...	2	...	...	3	...	...	...	...	...	1	...	6	...	2	...	120
...	...	22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	22
1	...	1	132	...	2	...	...	...	1	...	...	1	3	...	...	1	...	...	...	2	4	...	...	...	4	...	...	...	10	...	239
...	...	...	94	2	9	...	...	3	...	...	1	1	...	10	...	...	1	...	...	...	...	...	...	...	...	...	...	2	...	1	235
...	...	...	25	...	1	...	1	...	3	...	...	...	...	2	...	2	...	...	...	2	...	...	...	...	...	...	1	...	1	...	76
...	...	...	...	...	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
...	...	...	27	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	3	...	...	...	...	...	...	...	...	...	46
...	...	...	87	...	7	...	...	...	...	...	...	1	...	3	...	2	...	...	...	...	...	2	...	...	1	...	...	...	...	...	149
1	3	5	198	1	1	...	...	1	...	...	1	...	...	3	...	...	...	...	1	4	15	1	...	1	...	3	1	...	...	...	385
3	2	2	101	...	3	...	...	2	...	...	...	...	4	5	1	3	...	...	1	...	5	3	...	...	5	3	14	1	4	...	292
...	2	1	78	1	1	...	...	...	...	...	...	...	1	6	2	2	...	...	...	...	10	...	...	...	3	...	...	...	8	...	240
...	...	...	39	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	1	...	...	...	...	...	...	2	...	63
...	...	...	22	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	46
...	...	...	77	...	...	...	...	1	2	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	98
...	1	...	...	...	126	...	...	...	1	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	142
1	3	...	2	2	105	...	...	...	1	...	...	1	1	...	...	1	...	...	2	1	...	...	...	...	...	...	3	1	1	...	172
...	1	...	2	...	56	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	4	...	71
...	...	...	...	...	...	17	1	...	3	...	...	...	...	...	...	1	1	...	...	...	...	...	6	...	...	...	...	...	1	...	59
...	...	...	...	...	...	...	1	...	159	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	165

TABLE 2—SHOWING DISTRIBUTION

NAME OF COLLEGE.	Alabama, 569.	Arizona, 9.	Arkansas, 463.	California, 393.	Colorado, 161.	Connecticut, 274.	Delaware, 54.	Dist. Colum., 132.	Florida, 107.	Georgia, 576.	Idaho, 41.	Illinois, 2,383.	Indian Ter., 140.	Indiana, 815.	Iowa, 828.	Kansas, 473.	Kentucky, 891.	Louisiana, 489.	Maine, 175.	Maryland, 414.	Mass., 923.
College of Physicians and Surgeons.—R	4	...	...	5	1	10	...	...	1	3	...	4	...	3	1	2	1	...	4	1	12
Cornell University Medical College.—R	1	...	...	1	...	2	...	...	...	...	...	1	...	...	1	...	1	...	3	...	6
Eclectic Medical College.—E	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Long Island College Hospital.—H	...	...	...	...	...	5	2	1	1	...	...	...	...	...	...	...	...	...	...	2	1
New York Homeo. Med. Coll. and Hosp.—H	...	...	...	1	...	6	...	1	...	...	...	...	...	...	3	...	...	...	...	...	2
N. Y. Med. Coll. and Hosp. for Women.—H	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Univ. and Bellevue Hosp. Medical Coll.—R	...	...	...	...	1	22	...	...	1	...	...	1	...	4	...	...	...	...	1	1	4
Syracuse Univ. Coll. of Med.—R	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2
University of Buffalo. Medical Dept.—R	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...
Leonard Medical School.—R	10	...	2	...	...	...	...	2	4	11	...	...	1	...	...	...	...	1	...	2	...
Wake Forest School of Medicine.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
North Carolina Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Med. Dept., Univ. of N. Carolina.—R	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...
Western Reserve University Med. Coll.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	1	...	...	...	...	2
Cleveland Coll. of Physicians and Surgs.—R	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
Cleveland Homeopathic Med. College.—H	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eclectic Medical Institute.—E	...	...	1	...	1	...	...	...	1	...	...	7	...	9	2	1	13	...	...	...	...
Medical College of Ohio.—R	...	...	...	...	...	...	...	1	1	...	...	3	...	8	...	...	20	...	...	...	...
Pulte Medical College.—H	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...
Miami Medical College.—R	1	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	4	...	...	...	...
Ohio Medical University.—R	...	...	...	...	...	...	...	...	...	...	...	1	...	3	...	...	...	...	...	...	1
Starling Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Toledo Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
College of Medicine, Epworth University.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
School of Med., University of Oklahoma.—R	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...
University of Oregon, Medical Dept.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Medical Department, Willamette Univ.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Temple Coll. of Phila., Dept. of Medicine.—R	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
University of Pennsylvania, Dept. of Med.—R	4	...	2	1	1	2	6	1	2	1	1	2	...	7	6	1	4	1	2	4	21
Hahnemann Med. Coll. and Hospital.—H	...	...	...	2	...	1	3	5	...	...	...	...	...	...	1	2	1	...	...	2	2
Jefferson Medical College.—R	1	...	3	2	...	10	11	1	1	6	3	7	...	3	3	1	3	...	2	3	15
Woman's Med. Coll. of Pennsylvania.—R	...	...	...	1	1	1	1	4	...	...	...	1	...	...	...	2	3	...	3	...	3
Medico-Chirurgical Coll. of Philadelphia.—R	...	...	...	...	...	3	3	...	...	...	...	1	...	...	1	...	3	1	1	1	3
Western Pennsylvania Medical College.—R	...	...	...	1	...	...	...	...	...	...	...	4	...	3	...	...	...	...	...	...	...
San Tomaso University, Manila.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Med. Coll. of State of South Carolina.—R	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Tennessee Medical College.—R	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	...	7	...	...	...	...
Knoxville Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Medical Dept., University of Nashville.—R	43	...	13	...	...	...	...	...	4	3	...	1	1	1	...	...	9	34	...	...	...
Vanderbilt University, Med. Department.—R	23	...	8	2	...	...	...	...	...	9	...	1	...	2	...	...	15	8	...	...	1
University of Tennessee, Medical Dept.—R	10	...	8	...	...	1	...	...	...	...	...	3	...	...	...	...	20	4	...	...	...
Meharry Medical College.—R	19	...	21	...	1	...	...	...	14	27	...	8	1	1	...	6	15	6	...	1	...
Memphis Hospital Medical College.—R	24	...	60	1	...	...	...	...	1	...	...	...	14	...	...	2	2	80	...	...	...
University of the South.—R	14	...	1	...	...	...	1	...	4	12	...	1	...	...	...	...	1	14	...	...	1
Chattanooga Medical College.—R	51	...	4	2	2	3	...	...	8	12	3	4	4	1	2	...	4	3	...	2	1
Univ. of West Tennessee, Med. Dept.—R	...	...	9	...	...	...	...	...	...	...	...	...	2	...	...	...	...	3	...	...	...
Med. Dept., Ft. Worth University.—R	1	...	5	1	...	...	...	...	...	...	...	...	12	1	1	1	...	4	...	...	...
University of Texas, Dept. of Med.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Baylor University College of Medicine.—R	...	...	1	...	...	...	...	...	...	2	...	...	6	...	...	...	...	2	...	...	...
Physio-Medical Coll. of Texas.—Ph. M	...	...	3	...	...	...	...	...	...	1	...	...	7	1	...	...	...	...	...	...	...
Gate City Medical College.—R	3	...	45	...	...	...	...	...	...	...	...	...	17	1	...	1	...	13	...	...	...
Southwestern Univ. Medical College.—R	...	1	1	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...
College of Physicians and Surgeons.—R	...	...	14	1	1	...	...	...	...	...	...	1	16	...	...	2	...	2	...	...	1
University of Vermont, Medical Dept.—R	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	5	...	21
Medical College of Virginia.—R	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
University of Utah, Medical Dept.—R	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
University College of Medicine.—R	1	...	...	1	...	...	2	...	1	5	...	...	...	...	...	...	...	...	...	1	...
Univ. of Virginia, Dept. of Medicine.—R	3	...	3	...	...	2	1	...	1	1	...	1	...	1	...	...	3	...	...	7	...
University of West Virginia.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Milwaukee Medical College.—R	...	...	...	...	...	1	...	...	...	...	...	1	...	...	2	...	...	...	...	...	...
Wisconsin Coll. of Phys. and Surgs.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

CURRICULUM.—*Concluded from page 627.*

	No. of Hours of Lectures.	Hours of Laboratory.	Hours of Clinics.	Ttotal.
Nose and throat	30	..	30	60
Mental and Nervous Diseases	60	..	60	120
Electro-Therapeutics	20	..	40	60
Genito-Urinary Diseases	30	..	30	60
Dermatology and Syphilis	20	..	20	40
Hygiene and Public Health	30	..	..	30
Dietetics	30	..	..	30
Medical Jurisprudence	30	..	..	30
	1,750	1,010	1,240	4,000

The following colleges are members:

College of Medicine University of Southern California, Los Angeles, Cal.; University of California Medical Department, San Francisco, Cal.; Colorado School of Medicine, University of Colorado, Boulder, Colo.; Denver and Gross College of Medicine, Medical Department of the University of Denver, Denver, Colo.; Yale University Department of Medicine (Yale Medical School), New Haven, Conn.; George Washington University Department of Medicine, Washington, D. C.; Georgetown University School of Medicine, Washington, D. C.; Howard University Medical Department, Washington, D. C.; American Medical Missionary College, Battle Creek, Mich., and Chicago, Ill.; College of Medicine of the University of Illinois (College of Physicians and Surgeons), Chicago, Ill.; Illinois Medical College, Chicago, Ill.; Indiana Medical College, School of Medicine, Purdue University, Indianapolis, Ind.; University of Indiana School of Medicine, Bloomington, Ind.; Drake University College of Medicine, Des Moines, Iowa; College of Medicine University of Iowa, Iowa City, Iowa; Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa; Sioux City College of Medicine, Sioux City, Iowa; Kansas Medical College, Medical Department of Washburne College, Topeka Kan.; School of Medicine University of Kansas, Lawrence, Kan.; Hospital College of Medicine, Louisville, Ky.; Kentucky School of Medicine, Louisville, Ky.; Kentucky University Medical Department, Louisville, Ky.; Louisville Medical College, Louisville, Ky.; Flint Medical College, Medical Department New Orleans University, New Orleans, La.; Baltimore Medical College, Baltimore, Md.; College of Physicians and Surgeons, Baltimore, Md.; Johns Hopkins University, Medical Department, Baltimore, Md.; University of Maryland School of Medicine, Baltimore, Md.; Woman's Medical College, Baltimore, Md.; College of Physicians and Surgeons, Boston, Mass.; Detroit College of Medicine, Detroit, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, Mich.; Hamline University College of Medicine, Minneapolis, Minn.; Medical Department University of Mississippi, Oxford, Miss.; University of Missouri Department of Medicine, Columbia, Mo.; University Medical College, Kansas City, Mo.; Medical Department St.Louis University (Marion-Sims-Beaumont College of Medicine), St. Louis, Mo.; St. Louis College of Physicians and Surgeons, St. Louis, Mo.; Washington University Medical Department, St. Louis, Mo.; John A. Creighton Medical College, Medical Department of Creighton University, Omaha, Neb.; University of Nebraska College of Medicine, Lincoln and Omaha, Neb.; University of Buffalo Medical Department, Buffalo, N. Y.; University of North Carolina Medical Department, Raleigh, and Chapel Hill, N. C.; Wake Forest College of Medicine, Wake Forest, N. C.; Medical College of Ohio, Medical Department

Michigan, 589.	Minnesota, 391.	Mississippi, 624.	Missouri, 1,087.	Montana, 37.	Nebraska, 406.	N. Hamp., 107.	New Jersey, 499.	New Mexico, 23.	New York, 2,361.	Nevada, 23.	N. Carolina, 492.	N. Dakota, 61.	Ohio, 975.	Oklahoma, 115.	Oregon, 161.	Penna., 2,115.	R. Island, 104.	S. Carolina, 273.	S. Dakota, 79.	Tennessee, 689.	Texas, 1,026.	Utah, 101.	Vermont, 127.	Virginia, 582.	Washington, 105.	W. Virginia, 358.	Wisconsin, 499.	Wyoming, 9.	Foreign, 551.	P. Is., Ha., P. R., 325.	Total, 25,204.
...	2	2	2	...	...	1	65	...	263	2	1	...	8	...	3	10	5	3	...	2	3	1	2	1	1	1	3	...	17	...	450
...	...	1	1	...	...	1	35	...	293	...	...	...	4	...	1	4	3	...	...	...	1	...	...	...	...	...	...	...	8	1	369
...	...	...	...	...	...	...	6	...	95	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	105
1	...	...	1	...	...	...	29	...	292	...	...	...	1	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	5	...	343
...	...	...	...	...	...	...	16	...	76	...	...	...	1	...	...	2	...	...	...	...	1	...	...	...	...	...	...	...	1	...	110
...	...	...	...	...	...	...	7	...	12	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	20
...	1	...	...	1	...	1	57	...	353	...	...	...	4	...	...	5	...	...	...	2	1	2	3	...	1	...	...	2	13	...	481
...	...	...	...	...	...	...	...	...	138	...	...	...	...	...	...	4	...	...	...	...	...	...	1	...	2	...	...	...	4	...	153
...	...	...	...	...	...	...	...	...	215	...	...	...	2	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	1	...	225
...	...	6	1	...	...	...	2	...	1	...	48	...	...	...	...	6	...	10	...	...	2	...	...	29	...	1	...	...	8	...	147
...	...	...	...	...	...	...	...	...	...	...	19	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	20
...	...	...	...	...	...	...	...	...	...	...	88	...	...	...	...	...	...	3	...	...	...	...	...	1	...	...	...	...	...	...	92
...	...	...	...	...	...	...	1	...	1	...	85	...	...	...	...	1	...	1	...	...	...	...	...	5	...	...	...	...	...	...	96
...	1	...	...	...	...	...	...	...	3	...	...	...	64	...	...	8	...	...	...	...	...	...	...	...	...	1	...	...	...	...	85
...	...	...	...	...	...	1	...	...	...	...	...	...	76	...	...	3	...	...	...	1	...	...	...	...	...	...	...	...	5	...	88
1	...	...	...	...	...	...	...	...	5	...	...	...	33	...	...	10	...	...	...	...	...	...	...	...	...	...	...	...	1	...	56
...	1	...	...	...	...	...	1	...	5	...	...	...	36	...	...	14	...	...	...	1	4	...	...	...	...	19	...	...	...	...	116
...	...	...	...	...	...	1	...	...	...	...	...	...	90	1	...	...	...	1	...	1	...	1	...	...	...	2	1	...	6	...	137
...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	13
1	...	...	...	...	...	...	...	...	...	...	...	...	67	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	78
...	...	...	...	...	...	...	1	...	...	...	1	...	125	...	...	6	...	...	...	...	...	...	...	...	...	2	...	...	2	...	142
...	...	...	...	1	...	...	...	...	...	...	...	1	83	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	86
1	...	...	...	...	...	...	...	...	...	...	...	...	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20
...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	16
...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16
1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	54	1	...	...	...	...	...	...	...	...	18	...	2	...	4	...	82
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	47	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	50
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	89	...	...	...	...	...	...	...	4	...	...	...	...	6	...	101
1	3	2	...	...	...	5	48	...	16	...	7	...	18	...	1	354	3	2	...	...	9	1	1	3	6	9	...	...	19	...	577
...	...	...	...	...	...	...	18	...	14	...	...	...	7	...	...	123	...	...	...	...	...	...	...	...	1	...	...	...	4	...	186
...	1	1	3	...	2	2	45	...	15	...	17	...	19	1	6	384	3	1	3	...	5	4	1	5	1	10	1	1	11	...	617
...	...	2	1	...	2	1	11	...	8	...	1	...	2	...	1	66	2	2	...	1	1	...	...	1	1	...	...	...	12	...	135
3	...	...	1	...	1	...	33	...	14	...	1	...	2	...	...	382	1	...	...	1	...	3	...	...	...	1	...	...	7	...	467
...	...	...	2	...	...	...	...	...	2	...	...	...	14	...	...	267	...	...	...	...	...	...	...	...	...	14	...	...	...	...	307
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	310	310
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	95	...	...	...	...	...	...	...	...	...	...	...	...	97
...	...	1	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	1	...	62	...	...	...	4	1	...	...	...	...	...	82
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	45	...	...	...	...	...	...	...	...	...	...	45
...	...	66	...	...	...	...	...	...	3	...	4	...	...	...	...	...	...	14	...	82	17	...	...	...	...	3	...	...	...	...	298
...	...	14	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	82	17	...	...	1	...	...	2	...	2	...	197
...	...	16	3	...	...	...	...	...	...	...	6	...	...	...	...	1	...	4	...	94	10	...	...	...	...	...	...	...	2	...	182
...	...	51	18	...	...	...	1	...	...	...	4	...	4	5	...	2	...	20	...	56	33	...	...	...	...	1	...	...	6	...	321
...	...	198	5	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	71	31	...	...	...	...	...	...	...	...	...	492
...	1	15	1	...	...	...	1	...	...	...	5	...	...	...	...	4	...	5	...	17	18	...	...	2	...	1	...	...	...	...	119
2	...	8	...	...	...	...	8	1	5	...	10	...	2	...	...	3	1	5	...	83	6	2	...	10	1	5	1	...	8	...	267
...	...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	7	...	...	...	...	...	...	...	...	...	40
...	...	...	...	...	...	...	...	1	...	...	...	...	...	20	...	...	...	...	...	...	144	...	...	...	...	...	...	...	1	...	192
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	188	...	...	...	...	...	...	...	...	...	189
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	59	...	...	...	...	...	...	...	...	...	70
...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	32	...	...	...	...	...	...	...	...	...	47
...	1	2	3	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	1	67	...	...	...	...	...	...	...	...	...	156
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	81	...	...	...	...	...	...	...	...	...	85
...	...	...	1	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	1	44	...	...	1	...	...	...	...	4	2	95
...	...	...	...	...	...	17	4	...	27	...	...	...	...	...	...	2	...	...	...	...	...	...	82	...	...	...	...	...	5	...	170
...	...	...	...	2	...	...	...	...	1	...	21	...	2	...	...	2	...	7	...	1	2	...	...	176	...	23	...	...	1	...	242
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	29	...	...	...	...	...	...	...	...	30
...	...	...	...	...	...	...	5	1	1	...	43	...	...	...	...	1	...	1	...	1	...	...	...	133	...	6	...	...	2	...	205
...	1	5	...	1	...	1	1	...	3	...	2	...	1	...	...	5	...	2	...	6	1	...	...	63	...	4	1	...	2	...	122
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	32	...	...	...	...	35
7	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...	1	...	...	2	...	...	...	...	1	...	...	119	...	2	...	139
1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	84	...	...	...	86

University of Cincinnati, Cincinnati, Ohio; Miami Medical College, Cincinnati, Ohio; Cleveland College of Physicians and Surgeons, Medical Department Ohio, Wesleyan University, Cleveland, Ohio; Western Reserve University Medical College, Cleveland, Ohio; Ohio Medical University, Columbus, Ohio; Toledo Medical College, Toledo, Ohio; University of Oklahoma Medical Department, Norman, Okla.; University of Oregon Medical Department, Portland, Ore.; Willamette University Medical Department, Salem, Ore.; Western Pennsylvania Medical College, Medical Department Western University of Pennsylvania, Pittsburg, Pa.; Meharry Medical College, Medical Department Walden University, Nashville, Tenn.; University College of Medicine, Richmond, Va.; University of West Virginia Medical Department, Morgantown, W. Va.; Milwaukee Medical College, Milwaukee, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, Wis.

The secretary-treasurer of the Association is Dr. Fred C. Zapffe, 1764 Lexington Street, Chicago.

SOUTHERN MEDICAL COLLEGE ASSOCIATION.

The following requirements for admission to the freshman year are exacted by the colleges belonging to this Association:

SECTION 3.—He must possess a diploma of graduation from some literary or scientific institution of learning, or a certificate that he has passed the entrance examination to a university, or a certificate from some legally constituted high school. The minimum preliminary education required by the Southern Medical College Association shall be, after Jan. 1, 1906, a grammar school education and two years' successful attendance at a recognized preparatory school or a high school, or its equivalent, said equivalent to be determined by a superintendent of public instruction. A student may be given one month from date of his admission to submit his certificate of qualification. And if he fails to possess the requisite educational qualifications in one or more branches, he may matriculate and attend his first course of lectures, but must present the requisite certificate before matriculating in the second course, and all tickets or certificates issued in such cases must have the conditions printed plainly on the face of each.

The following colleges are members:

Medical Department University of Tennessee, Nashville, Tenn.; Medical Department University of Nashville, Nashville, Tenn.; Medical Department University of the South, Sewanee, Tenn.; Medical Department Vanderbilt University, Nashville, Tenn.; Medical Department Fort Worth University, Fort Worth, Texas; Medical College of Virginia, Richmond, Va.; Tennessee Medical College, Knoxville, Tenn.; Medical College of Alabama, Mobile, Ala.; Birmingham Medical College, Birmingham, Ala.; University College of Medicine, Richmond, Va.; Medical Department Baylor University, Dallas, Texas; Medical Department, University of Mississippi, Oxford, Miss.; Memphis Hospital Medical College, Memphis, Tenn.; Chattanooga Medical College, Chattanooga, Tenn.

The secretary-treasurer is Dr. G. C. Savage, Nashville, Tenn.

AMERICAN INSTITUTE OF HOMEOPATHY.

The minimum requirements for entrance into the freshman class of all homeopathic medical colleges, as adopted in 1901, are, with abbreviation, as follows:

COLLEGES AND MEDICAL GRADUATES.

By cities, arranged according to the population. (Population estimated by Census Bureau, 1903.)

City.	Population.	Number of Medical Colleges and of Graduates.											
		1901		1902		1903		1904		1905		1906	
		Colls.	Grads.	Colls.	Grads.	Colls.	Grads.	Colls.	Grads.	Colls.	Grads.	Colls.	Grads.
New York	3,716,139	7	307	7	313	7	391	7	378	7	422	7	387
Chicago	1,873,880	15	736	15	775	14	850	15	824	14	786	13	743
Philadelphia	1,367,716	5	422	6	400	6	469	6	442	6	469	6	394
St. Louis	612,279	6	331	6	252	6	334	6	350	6	326	6	321
Boston	594,618	4	184	4	234	4	204	4	237	4	171	4	185
Baltimore	531,313	8	358	8	433	8	404	8	472	8	250	8	371
Cleveland	414.950	3	85	3	89	3	88	3	75	3	59	3	48
Buffalo	381,403	1	46	1	38	1	45	1	54	1	37	1	44
San Francisco	355,919	6	109	6	104	5	118	5	116	5	100	5	93
Pittsburg	345,043	1	73	1	57	1	79	1	51	1	53	1	46
Cincinnati	332,934	6	137	5	133	5	156	4	107	4	97	4	95
Milwaukee	312,736	2	54	2	47	2	66	2	51	2	57	2	29
Detroit	309,653	3	74	3	67	3	95	3	106	3	92	3	119
New Orleans	300,625	2	116	2	57	2	87	2	96	2	90	2	110
Washington	293,217	4	77	4	75	4	94	3	120	3	115	3	100
Louisville	215,945	8	190	8	199	7	278	7	263	7	345	7	369
Minneapolis	214,112*	3	89	3	98	3	110	3	88	3	85	3	71
Indianapolis, Ind.	191,033	4	78	4	87	4	112	4	112	4	116	3	134
Kansas City, Mo.	173,064†	7	173	6	89	6	139	6	154	5	135	3	91
Toledo, Ohio	145,901	1	8	1	10	1	14	1	7	1	7	1	9
Denver, Colo.	144,588	3	40	2	45	2	39	2	39	2	37	2	31
Columbus, Ohio	135,487	2	77	2	93	2	107	2	74	2	67	2	72
Los Angeles, Cal.	116,420	1	19	1	14	1	27	2	24	2	29	2	31
New Haven, Conn.	114,600	1	18	1	20	1	27	1	23	1	22	1	25
Syracuse, N. Y.	114,443	1	19	1	19	1	29	1	31	1	31	1	23
Memphis, Tenn.	113,669	1	189	1	171	1	195	1	153	1	51	1	82
Omaha, Neb.	113,361	2	50	2	75	2	67	2	57	2	61	2	46
St. Joseph, Mo.	110,479	2	10	2	25	2	37	2	32	2	39	1	34
Portland, Ore.	98,655	1	11	1	20	1	10	1	16	1	26	1	16
Atlanta, Ga.	96,550	2	67	2	132	2	36	2	48	2	62	3	88
Albany, N. Y.	93,920	1	28	1	26	1	33	1	41	1	52	1	33
Grand Rapids, Mich.	91,630	1	17	1	47	1	16	1	....	1	5	1	12
Richmond, Va.	86,148	2	119	2	21	2	79	2	66	2	86	2	65
Nashville, Tenn.	82,711	4	272	4	123	4	158	4	162	4	213	4	171
Oakland, Cal.	70,386	..	....	..	....	..	....	..	....	..	....	1	4
Des Moines, Iowa	65,754	1	14	1	10	1	11	1	13	1	12	1	10
Charleston, S. C.	56,062	1	32	1	4	1	21	1	23	1	28	1	6
Kansas City, Kan.	55,348†	1	31	1	27	1	10	1	11	1	3	1	57
Portland, Me.	52,656	..	....	..	....	1	20	1	22	1	18	1	17
Ft. Wayne, Ind.	48,031	1	4	1	9	1	5	1	5	1	13	..	....
Lincoln, Neb.	44,243	1	12	1	21	1	16	1	22	1	15	2	15
Dallas, Tex.	44,159	2	23	3	32	3	35	5	65	4	69	4	41
Birmingham, Ala.	42,087	1	15	1	8	1	22	1	5	1	16	1	8
Little Rock, Ark.	42,036	1	20	1	11	1	12	1	19	1	28	1	26
Augusta, Ga.	41,283	1	30	1	47	1	7	1	26	1	14	1	30
Saginaw, Mich.	41,151	1	24	1	41	1	34	..	....	..	....	..	....
Mobile, Ala.	40,686	1	38	1	13	1	12	1	38	1	31	1	29
Topeka, Kan.	35,388	1	....	1	16	1	13	1	24	1	23	1	18
Knoxville, Tenn.	34,344	2	39	2	26	2	14	2	18	2	19	2	23
Galveston, Tex.	31,742	1	6	1	13	1	35	1	23	1	23	1	31
Sioux City, Iowa	31,701	1	5	1	10	1	12	1	12	1	14	1	14
Chattanooga, Tenn.	30,469	2	56	2	48	2	42	2	38	1	39	1	33
Ft. Worth, Tex.	27,192	1	27	1	17	1	5	1	9	1	21	1	24
Charlotte, N. C.	20,050	..	....	..	....	..	....	1	17	1	26	1	24
Burlington, Vt.	19,855	1	15	1	32	1	31	1	55	1	48	1	47
Ann Arbor, Mich.	16,033	2	91	2	92	2	105	2	122	2	73	2	87
Jackson, Tenn.	15,852	..	....	..	....	..	....	1	3	1	6	1	4
Keokuk, Iowa	14,803	1	51	1	52	1	56	1	47	1	50	1	50
Raleigh, N. C.	13,934	2	1	2	21	2	27	2	25	2	30	2	44
Iowa City, Iowa	7,987	2	51	2	47	2	46	2	58	2	74	2	59
Charlotteville, Va.	6,449	1	53	1	53	1	25	1	31	1	41	1	21
Boulder, Colo.	6,150	1	9	1	13	1	8	1	17	1	6	1	16
Columbia, Mo.	5,651	1	11	1	....	1	12	1	10	1	8	1	8
Texarkana, Tex.	5,256	..	....	..	....	..	....	1	26	1	26	1	40
Brunswick, Me.	5,210	1	40	1	4	..	....	..	....	..	....	..	....
Salem, Ore.	4,258	1	5	1	5	1	7	1	8	1	7	1	15
Hanover, N. H.	1,884	1	27	1	15	1	14	1	13	1	12	1	10
Davidson, N. C.	904	1	8	1	18	1	10	..	....	..	....	..	....
Sewanee, Tenn.	440	1	102	1	81	1	38	1	24	1	36	1	28
Totals	....	156	5,423	155	5,174	152	5,698	155	5,698	151	5,592	148	5,327
Cities of 100,000 or more	....	109	4,069	107	4,019	104	4,661	104	4,536	102	4,319	97	4,103
Cities of 50,000 to 100,000	....	14	591	14	410	15	394	15	402	15	505	17	479
Cities of 25,000 to 50,000	....	17	299	18	312	18	264	19	304	17	325	17	292
Cities of 10,000 to 25,000	....	6	158	6	197	6	219	8	269	8	233	8	256
Cities of less than 10,000	....	10	306	10	236	9	160	9	187	9	210	9	197

* With population of St. Paul figures would be 386,150.

† Kansas City, Mo., and Kansas City, Kan., are adjoining, and together have 228,412 population.

1. English Composition.—Exercise on assigned theme. not less than 200 words. Exercise in reading. Exercise in correction of ungrammatical sentences.

2. Mathematics.—Arithmetical exercises in (a) vulgar fractions, (b) decimals, (c) percentage, (d) proportion, (e) square and cube root, (f) weights and measures, (g) decimal system. Mensuration.—(a) Definition of terms, (b) exercises under the more fundamental rules.

3. Geography.—General facts about North America.

4. History.—General, with particular reference to human progress in art, science and letters. (The examination to avoid exact dates and minor details.)

5. Latin Language.—(a) Grammar, (b) four books of Cæsar or its equivalent.

The colleges recognized as in good standing by this organization are: Hahnemann Medical College of the Pacific; Denver Homeopathic Medical College; Hahnemann Medical College, Chicago; Hering Medical College; Homeopathic Medical Department of the State University of Iowa; Southwestern Homeopathic College, Louisville, Ky.; Kansas City Hahnemann

Medical College; Southern Homeopathic Medical College, Baltimore, Md.; Boston University School of Medicine; Homeopathic Medical College of University of Michigan; Detroit Homeopathic College; College of Homeopathic Medicine and Surgery of University of Minnesota; Homeopathic Medical College of Missouri; New York Homeopathic Medical College; New York Medical College for Women; Cleveland Homeopathic Medical College; Pulte Medical College, Cincinnati; Hahnemann Medical College of Philadelphia.

The secretary is Dr. Charles Gatchell, 100 State Street, Chicago.

NATIONAL CONFEDERATION OF ECLECTIC MEDICAL COLLEGES.

The following are the present minimum requirements for admission to colleges members of this Association:

1. Good English education, to be attested by (a) first-grade teacher's certificate, or (b) a diploma from a graded high school or literary or scientific college or university, or (c) regents' medical student's certificate, or (d) entrance examination covering a high school course including an elementary knowledge of natural history, physics and Latin.

2. Graduates from pharmaceutical, dental and veterinary colleges *may be* allowed one year's time on a four-year medical course only on condition that they comply with the entrance requirements and pass all examinations and perform all laboratory work embraced in the course of study of the freshman year. One year's advanced standing *may be* given students with degrees from a recognized literary college.

3. The course of instruction shall consist of a four-year graded course or its equivalent, as herein prescribed, including four sessions of seven months each in four different calendar years.

The following colleges are members of this Association:

American Medical College, St. Louis, Mo.; Bennett College of Eclectic Medicine and Surgery, Chicago, Ill.; California Medical College, San Francisco, Cal.; Eclectic Medical College of the City of New York, New York, N. Y.; Eclectic Medical Institute, Cincinnati, Ohio; Georgia College of Eclectic Medicine and Surgery, Atlanta, Ga.; Lincoln Medical College, Lincoln, Neb.; Kansas City Eclectic Medical University, Kansas City, Mo.

The secretary-treasurer is John K. Scudder, M.D., 1009 Plum Street, Cincinnati, Ohio.

State Boards of Registration

COMING EXAMINATIONS.

Wyoming State Board of Medical Examiners, State Capitol, Cheyenne, September 5. Secretary, S. B. Miller, Laramie.

Massachusetts Board of Registration in Medicine, State House, Boston, September 11-12. Secretary, Edwin B. Harvey, Boston.

Oklahoma Board of Medical Examiners, Guthrie, September 25. Secretary, J. W. Baker, Enid.

New York Boards of Medical Examiners, Albany, September 25-28. Chief of Examining Division, Charles F. Wheelock, Albany.

Illinois May Report.—Dr. J. A. Egan, secretary of the Illinois Board of Health, reports the written examination held at East St. Louis May 2-4 1906. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 136, of whom 114 passed and 22 failed. The following colleges were represented:

College.	Year Grad.	Number Examined.
PASSED.		
St. Louis University (Marion-Sims-Beaumont Med. Coll.)	(1905) 1; (1906)	55, 56
College of P. and S., St. Louis	(1906)	13
Barnes Med .Coll.	(1905) 1; (1906)	16, 17
Washington University	(1906)	26
Homeopathic Med. Coll. of Missouri	(1906)	1
American Med. Coll. of Missouri	(1906)	1
FAILED.		
Barnes Med. Coll.	(1903) 1; (1906)	6, 7
College of P. and S., St. Louis	(1906)	10
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.).	(1906)	5

Rhode Island July Report.—Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, July 5-6, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 30, of whom 23 passed, including 1 non-graduate, and 7 failed, including 2 non-graduates. The following colleges were represented:

College.	Year. Grad.	Per Cent.
PASSED.		
Yale University	(1898) 87; (1903)	82.3
Georgetown University	(1903)	75.1
Medical School of Maine	(1897)	76
Boston University	(1905)	75.9, 76.9
College of P. & S., Boston	(1906)	86.7
Harvard Univ. Med. School	(1904) 88.9; (1906)	78, 88, 88.6
Tufts Coll. Med. School	(1906)	79.3
College of P. S., Baltimore	(1902) 83.9; (1906)	75.1, 75.4, 81, 81.3.
College of P. & S., New York	(1906)	75.5; 83.1
Cornell University	(1905)	77.9
University Med. Coll., New York*	(1896)	75
Laval University	(1906)	79.4
FAILED.		
Maryland Med. Coll.	(1906)	61.5
Laval University	(1904) 65.8; (1905)	59.5, 62.7, 73.7

* Now the University and Bellevue Hospital Medical College.

Reference Table

Of State Board Reports published in The Journal from Jan. 6 to Aug. 18, 1906, inclusive:

State.	Date of Exam.	Jour. Page.	Jour. Date.	With Exam. ques.
Alabama	1905	745	March 10.	No.
Arizona	Oct. and Jan.	676	March 3.	No.
	April.	1,558	May 19.	No.
Arkansas	January.	455	February 10.	No.
	April.	1,784	June 9.	Yes.
California	December.	293	January 27.	No.
Connecticut	November.	59	January 6.	No.
	March	1,132	April 14.	No.
Delaware.	June.	294	January 27.	No.
	June	381	August 4	No.
Dist. of Columbia	October	59	January 6.	No.
	January	1,052	April 7.	No.
	April	1,638	May 26.	No.
Florida	October	294	January 27.	Yes.
	April	1,638	May 26.	No.
Georgia	April	1,785	June 9.	Yes.
	April	1,961	June 23.	No.
Idaho	April	1,558	May 19.	Yes.
Illinois	October	142	January 13.	No.
	January	1,052	April 7.	No.
	April	294	July 28.	No.
Indian Territory	April	1,307	April 28.	No.
Indiana	October	59	January 6.	No.
Iowa	December	455	February 10.	No.
	March	1,308	April 28.	No.
Kansas	October	532	February 17.	No.
	May	294	July 28.	Yes.
Kentucky	October	60	January 6.	No.
	May	1,961	June 23.	Yes.
Louisiana	November	377	February 3.	No.
	May	1,962	June 23.	No.
Maine	March	1,308	April 28.	No.
	July	533	August 18.	No.
Maryland	December	825	March 17.	No.
Massachusetts	November	60	January 6.	No
	March and May	64	July 7.	No.
Michigan	October	60.	January 6.	No.
	May	533	August 18.	Yes.
Minnesota	January	607	Feb. 24.	No.
	April	1,638	May 26.	Yes.
Mississippi	May	1,962	June 23.	No.
Missouri	December	142	January 13.	Yes.
Montana	April	1,308	April 28.	No.
Nebraska	February	907	March 24.	No.
New Hampshire	January	677	March 3.	No.
North Carolina	May	140	July 14.	Yes.
North Dakota	October	60	January 6.	No.
	January	455	February 10.	No.
	April	1,308	April 28.	No.
	July	381	August 4.	Yes.
Ohio	December	455	February 10.	No.
Oklahoma	December	979	March 31.	No.
	March	1,468	May 12.	No.
	June	295	July 28.	No.
Oregon	January	677	March 3.	No.
Pennsylvania	December	907	March 24.	No.
	June	139	July 14.	Yes.
Rhode Island	January	455	February 10.	No.
	April	1,468	May 12.	No.
South Carolina	June	64	July 7.	No.
South Dakota	July	455	February 10.	Yes.
	January	607	February 24.	Yes.
Tennessee	May	534	August 18.	No.
Texas	October	60	January 6.	No.
Utah	October	60	January 6.	No.
	January	908	March 24.	No.
	April	1,468	May 12.	No.
Vermont	January	456	February 10.	No.
Virginia	December	608	February 24.	No.
Washington	January	980	March 31.	Yes.
West Virginia	April	1,963	June 23.	No.
Wisconsin	January	677	March 3.	No.
Wyoming	January	608	February 24.	No.
	June	64	July 7.	No.

Minnesota June Report.—Dr. W. S. Fullerton, secretary of the Minnesota State Board of Medical Examiners, reports the written examination held at St. Paul, June 5-7, 1906. The number of subjects examined in was 15; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 65, of whom 54 passed and 11 failed. The following colleges were represented:

PASSED.

College.	Year of Graduation.	Medicine.	Surgery.	Obstetrics & Gynecology.	Materia Medica.	Anatomy and Histology.	Physiology.	Chem. Toxical & Urinalysis.	Pathology & Bacteriology	Prev. Med. & Med. Juris.	General Average.
N. W. Univ. M. S..	'06	86	91	86	76	99	93	85	89	80	87.2
N. W. Univ. M. S..	'06	76	88	82	86	96	76	68	78	75	80.5
N. W. Univ. M. S..	'06	81	89	82	90	98	81	92	82	75	85.5
Coll. P. & S. Ch'go.	'06	77	84	80	68	80	86	65	83	75	77.5
Hamline Univ. ...	'06	83	33	81	95	91	94	77	85	74	84.7
Hamline Univ. ...	'06	78	87	81	73	85	81	70	80	75	80.
Hamline Univ. ...	'06	77	90	83	88	83	90	89	81	75	84.
Hamline Univ. ...	'06	78	79	78	91	85	92	78	76	73	81.1
Hamline Univ. ...	'06	86	89	81	91	91	85	77	87	78	85.
Hamline Univ. ...	'06	78	88	83	94	90	90	81	80	76	84.4
Hamline Univ. ...	'06	77	85	81	87	83	75	80	82	73	80.3
Hamline Univ. ...	'06	79	85	82	95	88	90	88	77	76	84.4
Hamline Univ. ...	'06	78	80	78	83	80	76	83	78	75	79.
Hamline Univ. ...	'06	73	81	86	88	77	86	67	75	75	78.6
Hamline Univ. ...	'06	84	85	88	89	91	94	90	82	77	86.6
Hamline Univ. ...	'06	78	73	87	81	80	75	71	75	74	77.2
Hamline Univ. ...	'06	77	72	74	80	82	78	89	77	77	79.4
Hamline Univ. ...	'06	79	83	89	87	79	85	84	80	76	82.4
Hamline Univ. ...	'06	89	86	80	83	83	94	77	77	76	82.7
Hamline Univ. ...	'06	79	87	82	84	85	80	73	77	77	80.4
Hamline Univ. ...	'06	87	84	81	79	87	89	70	86	75	82.
Hamline Univ. ...	'06	80	79	87	75	82	81	60	88	76	78.6
Univ. of Minn....	'06	80	88	90	82	91	90	65	77	76	82.1
Univ. of Minn....	'06	75	72	94	90	85	79	83	72	75	80.5
Univ. of Minn....	'06	75	60	87	93	89	83	95	85	76	82.4
Univ. of Minn....	'06	76	81	89	88	89	81	88	75	73	82.2
Univ. of Minn....	'06	78	74	78	83	86	85	89	80	78	81.3
Univ. of Minn....	'06	80	79	88	83	82	80	76	87	73	80.8
Univ. of Minn....	'06	78	75	83	74	76	81	76	77	73	77.
Univ. of Minn....	'06	79	89	88	92	86	80	84	80	78	84.
Univ. of Minn....	'06	72	79	88	72	78	79	72	81	75	77.3
Univ. of Minn....	'06	76	93	90	90	91	95	72	89	76	85.7
Univ. of Minn....	'06	76	75	77	85	91	86	77	75	77	79.8
Univ. of Minn....	'06	75	88	84	88	89	80	83	82	75	82.6
Univ. of Minn....	'06	78	88	91	90	88	79	83	80	76	83.5
Univ. of Minn....	'06	78	69	80	83	74	81	81	80	78	78.2
Univ. of Minn....	'06	79	89	88	79	91	75	82	89	76	83.1
Univ. of Minn....	'06	79	88	97	96	91	87	85	84	77	87.1
Univ. of Minn....	'06	77	93	89	88	77	80	65	73	76	79.7
Univ. of Minn....	'06	82	88	96	89	87	87	84	83	76	85.2
Univ. of Minn....	'06	78	73	85	90	92	82	95	80	76	83.4
Univ. of Minn....	'06	76	85	75	72	87	89	78	83	74	79.8
Univ. of Minn....	'06	83	75	92	89	89	99	87	84	74	85.7
Univ. of Minn....	'06	76	80	67	81	88	88	80	84	75	79.8
Univ. of Minn....	'06	76	86	84	89	79	78	65	77	77	77.8
Univ. of Minn....	'06	82	79	94	93	91	90	71	84	76	84.4
Univ. of Minn....	'06	61	81	84	80	83	76	65	75	76	75.6
Univ. of Minn....	'06	78	79	85	71	89	83	67	76	74	78.8
Univ. of Minn....	'06	88	74	94	83	96	95	95	90	76	87.8
Univ. of Minn....	'05	75	77	90	81	75	75	78	75	75	77.8
Univ. of Minn. (H)	'06	81	82	86	75	77	85	73	82	78	79.8
Univ. of Toronto.	'06	83	84	95	72	85	78	83	71	76	80.7
Univ. of Toronto.	'05	79	81	88	69	85	78	95	82	78	81.6
Queen's Univ. Ont.	'05	77	74	76	85	82	90	61	75	68	76.4

FAILED.

College.	Year of Graduation.	Medicine.	Surgery.	Obstetrics & Gynecology.	Materia Medica.	Anatomy and Histology.	Physiology.	Chem. Toxical & Urinalysis.	Pathology & Bacteriology	Prev. Med. & Med. Juris.	General Average.
Hamline Univ. ...	'06	75	68	70	62	80	60	59	75	66	69.4
Hamline Univ. ...	'06	75	81	77	31	75	75	65	75	74	69.7
Hamline Univ. ...	'06	75	83	83	51	89	78	70	75	75	75.5*
Hamline Univ. ...	'05	75	57	71	78	71	78	60	59	64	69.1
Univ. of Minn....	'06	75	73	77	88	55	74	60	77	75	72.6
Univ. of Minn....	'06	76	65	80	66	40	80	96	79	77	73.2
Univ. of Minn....	'06	73	77	80	50	75	97	73	79	75	75.4*
Univ. of Minn....	'06	75	69	74	46	81	78	55	68	72	68.6
Univ. of Minn....	'06	75	86	73	52	81	75	60	75	75	72.4
Barnes Med. Coll.	'05	42	57	76	21	26	64	51	48	72	50.7
Jefferson M. C....	'97	66	68	77	75	53	75	55	89	73	70.1

* Failed to obtain passing mark in important branches.

The following questions were asked:

MATERIA MEDICA AND THERAPEUTICS.

1. What are the therapeutic uses of spiritus glycerylis nitratis? Give the symptoms produced in man by full therapeutic doses. 2. Distinguish between the following, by giving the officinal name and physical properties of each: (a) Mercurous and mercuric iodid; (b) Mercurous and mercuric chlorid. 3. Write a short description of serum antidiphthericum, giving prophylactic and curative dosage, frequency of dosage, and manner of using. 4. Outline the treatment of a case of syphilis after diagnosis is certain. (a) To what stage is mercury particularly applicable? (b) In what stage is potassium iodid most beneficial? (c) What do you understand by mixed treatment? To what stage is it best suited? Write a prescription for it. 5. Write a brief description of adrenalin, giving source, physical properties, physiologic action, field of usefulness and method of use. 6. What is hyoscin hydrobromid? Give its physiologic action, chief use, and dosage. 7. What is the principal alkaloid of physostigma? Name its official salts, with dose of each; its physiologic antidotes; its chief therapeutic use. 8. Give a safe dosage rule in prescribing for children. 9. Give the adult dose with frequency of repetition of the following: (a) acid hydrocyanic. dil.; (b) aconitin (crystalized); (c) fl. ext. gelsemium; (d) liq. potassium arsenitis; (e) sodium nitrite; (f) morphia acetate; (g) chloral hydrate; (h) sodium salicylate; (i) strychnia sulphate; (j) res. podophyllum. 10. Criticise the following prescription:

℞. Morphiæ sulphat ....gr. iii
Hydrarg. chlorid. corrosiv. ....gr. i
Potas. iodid. ....dram ii
Aq. pur. ....℥ii
Elix. simp. q. s. ad............................℥iii
M. Sig.: A teaspoonful in water three times a day.

HOMEOPATHIC MATERIA MEDICA.

1. Compare aconite, veratrum viride, gelsemium and ferrum phos. in febrile conditions. 2. Mention four of the most prominent remedies in the treatment of pneumonia and give indications for the use of the same. 3. Give indications for the use of sepia, graphites, arsenicum, mezereum and rhus in affections of the skin. 4. Name four of the principal remedies that may be used for whooping-cough and differentiate. 5. Compare sepia and pulsatilla; sepia and lilium tigrinum. 6. Give an outline of the use of rhus tox. 7. Give an outline of the use of cuprum metalicum. 8. Compare belladonna, glonoin and melilotus. 9. Differentiate belladonna, rhus tox., cantharis in facial erysipelas. 10. Name five principal remedies for coughs, with their indications.

SURGERY.

1. Colles' fracture—mechanism of origin, anatomic findings, symptoms and treatment. 2. Give in detail treatment of impending death from chloroform anesthesia. 3. Pes planus—symptoms, differential diagnosis and treatment. 4. Fracturæ colli femoris—symptoms subjective and objective, measurements, prognosis and treatment. 5. Describe briefly three (3) surgical diseases of the knee joint characterized by pain and swelling, and name three non-surgical diseases of the knee joint characterized by the same symptoms. 6. Differentiate in parallel columns between perforated duodenal ulcer; perforated typhoid intestinal ulcer and perforative appendicitis. 7. (a) Name ten (10) surgical diseases characterized by abdominal pain. (b) Name ten (10) non-surgical diseases characterized by abdominal pain. 8. Name five (5) surgical diseases peculiar to women characterized by abdominal pain and state briefly the treatment of each. 9. Panophthalmitis—causes, prognosis and treatment. 10. Give indications for enucleation of eye.

OBSTETRICS.

1. Describe the perineal body? What other structures constitute the pelvic floor. 2. Explain fully the mechanism of the second stage of normal labor. 3. Give principal causes of abortion, both local and constitutional; also prophylactic treatment for same. 4. How would you manage a case of transverse presentation with arm prolapsed? 5. What method do you advise to prevent laceration of the perineum? Describe fully its immediate repair in case of laceration.

DISEASES OF WOMEN.

1. Give causes and symptoms of acute ovaritis. 2. Describe fully a recognized operation for cystocele. 3. Give usual modes of infection and symptoms of general septic peritonitis. 4. Give symptoms of movable kidney; divide into subjective and objective. Treatment. 5. What are the most frequent local and general disturbances attending the menopause?

PHYSIOLOGY.

1. Locate and describe, and give function of kidney. 2. Same of cerebellum. 3. Same of parotid gland. 4. Give physiology of digestion of albuminoids. 5. Same of hydrocarbons. 6. Define and describe leucocytes. 7. Describe and explain normal heart sounds. 8. What is lymph; chyle; chyme? 9. Localize five centers in brain. 10. Trace the various steps in the development of an impregnated ovum.

CHEMISTRY, TOXICOLOGY AND URINALYSIS.

1. Give simple test for presence of sodium, potassium, strontium. 2. Give symptoms and treatment of carbolic acid poisoning. 3. Give sources, symptoms and treatment of ptomain poisoning. 4. Give two reliable tests for glycosuria. 5. Given a sample of urine to be analyzed, what would be your first procedure and what might you learn by it? 6. What is the signification of acetone in the urine? 7. What substances constitute the so-called "halogen group?" What is their leading chemical characteristic? 8. What do you understand by atomic weight? 9. What do you understand by chemical affinity? 10. How could you separate a mixture of oxygen and nitrogen?

MEDICAL JURISPRUDENCE.

1. Differentiate rigor mortis from the rigidity of hysteria and catalepsy. 2. How would you determine whether death was due to drowning or to some other cause and the body subsequently submerged? 3. To what extent is a physician protected by law in refusing on the witness stand to divulge the secrets of his patient? 4. What, in a medicolegal sense, constitutes malpractice? 5. What is monomania? Give two forms.

PREVENTIVE MEDICINE.

1. What precautions would you suggest to protect against whooping cough and measles during an epidemic? 2. What method would you suggest to insure pure milk supply for a community? 3. What measures would you adopt during a diphtheria epidemic to prevent contagion? 4. What is the cause of typhoid fever and where found? 5. What prophylactic measures would you recommend for the prevention of cholera infantum?

MEDICINE.

1. Give the symptoms, duration and prognosis of tubercular meningitis. 2. What physical signs warrant the diagnosis of aortic stenosis? 3. Contrast acute miliary tuberculosis with typhoid fever. 4. Define psoriasis. 5. What are the early symptoms of congenital syphilis? 6. Describe paralysis agitans. 7. What are the late symptoms of chronic interstitial nephritis, including urinary analysis? 8. What is the incubation period of scarlet fever, of typhoid fever, of diphtheria? 9. Give the formula for a single feeding of cow's milk modified for an infant of six months. 10 Describe the three commonest intestinal worms.

PATHOLOGY.

1. In a case of cerebral hemorrhage with convalescence, describe changes going on in extravasated blood and its effect on surrounding brain substance. 2. Describe briefly pathologic changes of

stomach, liver, kidneys and arteries produced by chronic alcoholism. 3. Describe the two pathologic stages of parenchymatous nephritis. 4. Describe the morbid anatomy of a case of osteomyelitis of tibia. 5. In a case of vesicular emphysema what are the pathologic changes of lungs and heart?

ANATOMY AND HISTOLOGY.

1. Describe the thyroid gland, anatomically. 2. Describe the formation of the brachial plexus and give its branches. 3. Diagram and name the lobes and fissures of the cerebrum. 4. What is the mediastinal space? Give subdivisions and contents of each. 5. Describe the suprarenal body anatomically. 6. Describe the Malpighian body histologically. 7. Describe the cornea histologically. 8. Diagram a section of a typical artery and name the structures. 9. Describe a red blood corpuscle and give the number per cubic millimeter in normal blood. 10. Describe the corpuscle of Vater or Pacinian body by diagram.

BACTERIOLOGY.

1. Name the different kinds of bacteria that may be found in case of suppurative otitis media. 2. Describe shape and characteristics of tetanus bacillus. 3. Describe mode of infection with malaria. Mention its exciting agent. 4. Describe your own process of disinfection of sick room after diphtheria. 5. What is the Widal test in typhoid fever?

Utah July Report.—Dr. R. W. Fisher, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, July 2-3, 1906. The number of subjects examined in was 19; total number of questions asked, 85; percentage required to pass, 75. The total number of candidates examined was 22, of whom 21 passed and 1 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent
College of P. & S., Chicago	(1906)	82. 93. 84. 85
College of P. & S., San Francisco	(1906)	89. 90
Northwestern Univ. Med. School	(1906)	81, 83
Rush Med. College	(1906)	87, 88
Hospital College of Med., Louisville	(1898)	83
University of Michigan	(1906)	85
University of Bellevue Hosp. Med. Coll	(1906)	81, 86
Creighton Med. Coll	(1905)	83
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(1905)	*83
Ensworth Central Med. Coll	(1906)	84
Medico-Chirurgical Coll., Philadelphia	(1906)	87, 90
Jefferson Med. Coll	(1906)	86, 86

FAILED.

St. Louis Univ. (Marion Sims-Beaumont Med. Coll.)	(1904)	61

* Second examination.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Erysipelas.

Erysipelas is not an infrequent infection, especially facial erysipelas. It begins most frequently as a primary lesion in the nose, gradually spreading to the face and the nearest glands in the neck. Within a space of a few hours the swelling may become so manifest as to close the patient's eyes and to cause the ears to swell out of proportion. Frequently the infection confines itself (and we say confines itself because no specific thus far has been found) to certain parts of the face, giving it the characteristic red, shiny appearance, or it may travel gradually to the scalp, neck and body. When the disease shows this tendency to travel it is very aptly called migratory. Just as this inclination to spread is rapid in its progress or slow, will the prognosis become more or less unfavorable, as the system will have more time to react and to eliminate the toxic material in the latter case and thus save the patient's strength.

A great deal has been written of the value of local treatment and the possibility of checking the extent of the infection by local applications or injections along the borders of the lesion. Other authorities place great stress on the value of internal treatment and at the same time express little confidence in local applications.

Locally, bichlorid of mercury dressings have been recommended in strength from 1 to 4,000 to 1 to 1,000. These dressings can not be applied properly to the face. The lead and opium lotion is recommended by some physicians, especially in those cases accompanied by burning and pain locally, and in some cases it has acted, seemingly, very efficiently. Iodin painted over the surface or around the edges is advised by some authorities, while others, still, recommend silver nitrate applied locally. With this latter preparation there is a possibility of injuring the epidermis, producing sloughing and a scar. The following combination, however, seems to be the most efficient local remedy:

℞. Ichthyoli		
Adipis lanolini hydrosi, āā	℥i	30

M. Ft. unguentum. Sig.: Apply locally and freely, followed by a dressing of plain sterilized gauze.

This preparation, owing to the absorption of the lanolin soon dries on the face, and consequently should be carefully washed off night and morning and a fresh dressing applied. While it is advisable to extend the ointment for a short distance beyond the diseased area, it does not check the extension of the infection. This combination, however, does seem to shorten the infection over the areas already involved, so that while new regions may be involved the older areas soon recover, and in a way this protects the vitality of the patient.

Osler is doubtful as to the value of internal treatment, but speaks of possible good being rendered by injections of solutions of bichlorid of mercury, carbolic acid, and the biniodid of mercury in strength of 2 per cent., a short distance beyond the border of the infection.

D. R. Brower, on the other hand, states that his experience has shown no value whatever in local applications, but he lauds the value of the tincture of the perchlorid of iron internally. He recommends this preparation in doses of twenty minims (1.30) each, at intervals of from two to three hours. At the same time, he emphasizes the value of whiskey in this infection, given in the form of eggnogs, five or six eggnogs a day, each containing one half an ounce (15.00) of whiskey.

It is probable that no medication has any value in cutting short the attack. Like pneumonia erysipelas is a self-limited disease, and the patient will recover if the system can be kept in a condition to withstand the effects of the poisons until the vitality of the organism has ceased.

Consequently, proper nursing is the keynote to success in such cases, by keeping the temperature down by bathing, and thus increasing the elimination, and likewise keeping the patient's strength up by proper nourishment. The circulation must be carefully watched, and if necessary strychnin or digitalis may be given for this purpose, administered in doses to meet the individual requirements.

Although the idea has been advanced that the field of infection may be limited by the local application of adhesive strips just beyond the borderline of the disease, experience has shown that such a procedure will not check its course, as the disease is spread through the subcutaneous tissue and not superficially over the surface of the skin.

Some authorities have advised applications of collodion for the same purpose, but its use has been without success. The value of such local measures have gained their unjustifiable reputations because, perhaps, the disease ceased to spread of its own accord simultaneously with such local applications.

The following combinations have also been suggested to be applied locally in the treatment of erysipelas:

℞. Guaiacoli	ʒss	2
Mentholis	gr. xv	1
Linimenti camphoræ	℥ii	60

M. Apply over the affected areas every two hours.

In strong, robust individuals pilocarpin is an old-time remedy, its value lying in its ability to promote elimination by the skin. It may be given as folows:

℞. Pilocarpinæ hydrochlor	gr. i	06
Sacchari lactis	gr. xii	75

M. Ft. cap. No. viii. Sig.: One capsule every six hours.

Or,

℞. Pilocarpinæ hydrochlor	gr. i	06
Aquæ	ʒiss	6

M. Sig.: Ten drops hypodermically every hour until free diaphoresis occurs.

Or,

℞. Liquoris plumbi subacetatis	f. ℥iii	90

M. Sig.: Add the entire amount to two quarts of warm sterile water and apply constantly on a soft cloth.

Radcliffe at one time stated that the following combination applied locally had almost specific properties:

℞. Ichthyoli	f. ʒii	8
Spts. etheris	f. ʒii	8
Collodii	f. ℥iiss	75

M. Sig.: To be applied locally.

Another combination suggested for local application is as follows:

℞. Plumbi acetatis
Ammonii carb., āā.......................ʒi 4
Aquæ rosæ.......................℥viii 240
M. Sig.: Apply locally on lint to allay the irritation.

Medicolegal

Malpractice Liability Same as for Personal Injury.

The Supreme Court of Washington says that, in the malpractice case of Froman vs. Ayars, where it holds there was sufficient evidence to support a verdict for the plaintiff for $5,000 damages for failure to properly treat a compound fracture of the bones of his left leg, about two inches above the ankle joint, counsel made an interesting argument to the effect that this case should be distinguished from one which is brought to recover for ordinary personal injuries, where the injury is wholly due to the neglect of the defendant in the case. It was argued that in this case the primary cause of the result which came to the plaintiff was the running away of the team, for which the defendant physician was in no way responsible, and that the degree of the latter's responsible relation to the final outcome could not be as great as that of one whose negligence laid the first foundation for the injury.

. The theory of the case, however, was that the final outcome to the plaintiff, by which he was deprived of a foot for the remainder of his life, would not have resulted if the defendant had properly applied his learning and skill. It was true, the plaintiff would have suffered pain and distress from the original injury, yet if the bones had properly united and the wound had healed, the suffering would have been but temporary, while as it was he must continue to suffer humiliation, inconvenience, and loss of earning power during the remainder of his life. If such a result would not have occurred but for the defendant's neglect, the court is not impressed that there was force in the logic of counsel's argument.

The defendant held himself as sufficiently skilled and learned to reasonably and properly treat the plaintiff's injury, and having undertaken to do so for a compensation, the duty was placed on him to bring to bear on such a treatment the reasonable and ordinary skill and care recognized by the members of his profession in general, as proper and necessary in such a case. He was neither required to exercise the highest grade of skill nor the highest degree of care, but only such as are recognized as ordinary and reasonable by the standards of his profession. The issue was made before the jury that he did not do this, and that his failure in that regard was the responsible cause of the final and serious result to the plaintiff.

Nor does the court think the award manifestly too large for a man 44 years of age at the time of the trial, the value of whose earning power should probably be viewed from the standpoint of a common laborer. His life expectancy at the time of his injury was admitted to be 26 years, and to pass through 26 years of life without a foot is a condition that it may be assumed no man, however humble his occupation, would be willing to accept for $5,000. There is seldom a case of this kind, or even one for ordinary personal injuries, when there does not seem to be some element of hardship either way the case may be decided; but such cases are triable by a jury and, when so tried, if there is reasonable evidence to support the verdict, it should not be reduced unless it is manifestly too large when all the facts and circumstances are considered.

Not Required to Provide Necessary Medical Attendance.

The Supreme Court of Oregon says that Miller vs. Beaver Hill Coal Co. was an action to recover for the breach of an alleged contract by which the company agreed to provide the plaintiff with necessary medical and surgical attention, at a hospital maintained by it, in case of his injury while in its employ. The evidence showed that the company had a hospital at its mine in charge of a physician at which its employés, and those of subcontractors paid through its office, were entitled to be cared for free in case of sickness or injury while in its service. For the support and maintenance of the hospital $1.50 a month was deducted from the wages of each employé by their consent, or at least without objection from them. The plaintiff, while at work for a subcontractor, was seriously injured by an iron splinter penetrating the abdominal wall. He was taken to the company's hospital and the wound examined by a physician temporarily in charge during the absence of the regular physician. The physician found the wound to be of such a character as to require a surgical operation which could not be performed by him alone or with the facilities at his command. He telephoned to the nearest town for assistance, but was unable to obtain a surgeon from that place and thereupon at the plaintiff's request telephoned to another place to a physician who went to the mine and performed the necessary operation. This physician charged the plaintiff $250 for his services, and, the company refusing to reimburse him therefor, this action was brought to recover the amount.

The court reverses a judgment rendered in favor of the plaintiff. It is of the opinion that the evidence fell far short of proving a contract by the company to provide the plaintiff with necessary medical and surgical attendance in case of injury. It says that the evidence merely showed that a certain sum each month was contributed by the plaintiff and his fellow employés, or exacted by the company, for the support and maintenance of a hospital for the use of the employés. There was no evidence that any statement or promise was made by the company to the plaintiff, or any of its employés, as to the object and purpose of the contribution or the benefit they would receive therefrom, other than that it was for hospital purposes. The transaction, therefore, under the testimony, constituted in law nothing more than a subscription by the plaintiff and the other employés for the charitable purpose of maintaining a hospital, where they could obtain such medical attendance and hospital accommodations as the fund thus subscribed would afford. A sick or injured employé was entitled to the use and benefit of the hospital and the medical services there provided, to the extent of the money contributed for that purpose, but he was not obliged to go to the hospital or to accept the accommodations. He could, if he chose, go elsewhere and employ physicians and attendants other than those provided by the company, and, if he did so, the company would not be liable to reimburse him therefor.

The only liability assumed by the company in collecting the fund was to expend it for the purpose for which it was subscribed, and no other. The mere fact that it received or exacted the contribution did not impose on it the absolute duty to furnish each contributor all the medical or surgical attendance that he might need or require, whether the fund provided was sufficient or not. The only duty of the company was to use ordinary care in the expenditure of the money and in the employment of physicians and surgeons in charge of the hospital, and it was not responsible for the negligence of the surgeon so employed in going away and leaving the hospital in charge of another.

Wills, Insanity in Ancestry, Suicide and Sanity.

The Court of Appeals of New York says, in the case of Roche vs. Nason, that the mere fact that a person came to his death by his own hand within a few days after he executed a codicil to his will did not justify an inference that it was drawn up or executed with suicidal intent. It says that we may guess or surmise that he contemplated suicide; but it is a matter of pure speculation, in the face of an equally strong probability that the thought of self-destruction never entered his mind until after the execution of the instrument. Moreover, it says that the fact that a person executes a will with this sin in contemplation does not necessarily imply any wrongdoing to be effected by his will. He disposes of his property after death as he might dispose of it during his lifetime. Again, the court says that there was testimony in this case from which it might be inferred that insanity had been manifested in the ancestry of the testator; but this proof would not properly lead to any inference of mental unsoundness on his part in the entire abtire absence of evidence tending to show any manifestations of mental derangement during his life of 37 years. Mental derangement can not be predicted solely on the circumstance that he killed himself. Insanity is not inferable from the mere act of suicide. Nor does the fact that a man has taken his own life, alone and of itself and in the absence of any other evidence as to his mental condition, warrant the deduction that his mind was unsound at the time of the suicidal act, or prior thereto, or that he lacked testamentary capacity, for human experience has often shown that sane men have taken their own lives.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

August 11.

1 *Does the Drinking of Water Give Typhoid Fever? R. C. Eccles, Brooklyn.
2 *Proper Limitations of the Medical and Surgical Treatment of Gastric Ulcer. G. W. McCaskey, Ft. Wayne, Ind.
3 Health and Mortality of the Cotton-Mill Operatives of Blackburn, England. F. S. Crum, East Orange, N. J.
4 Puerperal Types of Sepsis. W. S. Stone, New York.
5 *Study of Seventy Cases of Brain Tumor. A. C. Brush, Brooklyn, N. Y.
6 *Air Dilatation in the Treatment of Chronic Constipation. L. J. Hirschman, Detroit.
7 *Treatment of Injuries to the Extremities by Mechanotherapy. W. O. Rau, New York.

1. **Does Drinking of Water Cause Typhoid.**—Eccles declares that there is no reasonable room to doubt that the development of typhoid fever is connected with the use of infected water; but that typhoid fever results from the drinking of infected water is quite a different proposition. He then emphasizes the important part which flies play in carrying disease germs to food. It is easy to see how food may multiply disease germs to the danger point, but it is not evident, he declares, how any person could take the disease from water that thousands are drinking without the slightest injury.

2. **Treatment of Gastric Ulcer.**—McCaskey believes that every case of gastric ulcer ought, if possible, to have the benefit of careful medical treatment by an intelligent practitioner before the question of surgery has been considered at all. At the outset the case is medical, not surgical. There is no hard-and-fast rule by which the precise length of time can be decided during which medical treatment should be followed in intractable cases before surgical intervention is sought. Each case should be considered in its entirety. Repeated systematic, scientific study of stomach secretion and motility and the material obtained from the fasting stomach are of the greatest value to the physician who has the patient under his care.

5. **Study of Seventy Cases of Brain Tumor.**—Brush states that in twenty of his cases the most prominent early symptom was convulsive seizures. Next to such disorders defective vision was the most common early symptom for which the patient sought relief. Of his cases fourteen patients recovered under medicinal treatment, nineteen were improved by surgical means, thirteen died, twenty-six passed from observation as unimproved and eight are still under observation.

6. **Air Dilatation in Chronic Constipation.**—Hirschman believes that the direct stimulation of the atonic sigmoid and rectum by means of mechanical dilatation up to the present time has given the best results in cases of chronic constipation. He describes his simple pneumatic dilator for accomplishing this distension. In consists of a rubber bag with a stem, which is slipped over the distal end of a Wales bougie, No. 3-5, this bougie being canaled. Compressed air at a low pressure is allowed to enter the bag slowly and distension to any desired extent is produced. A cut-off valve easily regulates the distension. Instead of the compressed-air apparatus an ordinary atomizer bulb or a small bicycle pump may be used. The patient is placed in the Sims position for the treatment. This is repeated daily for from five days to a week. When defecation approaches the normal treatments are given on alternate days. The interval is gradually lengthened.

7. **Mechanotherapy.**—Rau speaks of the advantages of mechanotherapy in the treatment of injuries to the extremities. He describes the arthromotor and believes that its introduction is an important step forward in this field of treatment. This apparatus combines in one machine everything necessary for the treatment of the extremities. It gives passive as well as active movements, and can be fitted for every joint of the extremities. It can be regulated to go from the shortest to a full normal movement, and so as to begin a movement at any angle. Treatment is absolutely painless. In connection with the mechanical treatment, massage and, if possible, local application of heat should always be resorted to. The results of treatment in many cases have been very encouraging. Rau thinks that this treatment, when properly given, will greatly lessen the period of idleness following injuries to the extremities.

New York Medical Journal.

August 11.

8 *Puerperal Fever Treated by Uterovaginal Drainage. A. E. Gallant, New York.
9 *Résumé of Recent Literature Relating to the Suprarenal Glands and Their Application to Clinical Medicine. T. G. Davis, Los Angeles.
10 Gleanings Concerning Menstruation. J. Oliver, London, Eng.
11 *Chronic Atropin Poisoning. J. B. Tyrrell, Waterville, Minn.
12 Physiologic Actions and Therapeutic Uses of the Roentgen Rays. R. H. Boggs, Pittsburg, Pa.
13 *The Significance of the So-Called Occult Hemorrhages in the Diagnosis of Ulcer and Carcinoma of the Stomach. J. Friedenwald and L. J. Rosenthal, Baltimore.
14 Importance of Abdominal Examination Before Insurance. S. P. Gerhard, Philadelphia.
15 Importance of the Cystoscope in Diagnosis and Treatment of Diseases of the Urinary Organs. W. Ayres, New York.
16 Subsequent History of Thirty-two Cases of Chronic Gastric Ulcer Previously Reported. F. H. Murdoch, Pittsburg, Pa.
17 Functions of the Testicles. H. Richardson, Baltimore.

8. **Uterovaginal Drainage in Puerperal Fever.**—Gallant reports six cases in which use was made of his bivalve uterine drain with most excellent results.

9. **Function of Suprarenal Glands.**—Davis believes that we are warranted in concluding that an excess of epinephrin is a causative factor in the production of artero-capillary fibrosis and atheroma. He also calls attention to an unrecognized etiologic factor in the production of disease of the vascular system, namely, the sexual function. His attention was directed to this, he says, while studying the embryology and histology of the suprarenal gland. Its embryologic source and the arrangements of muscle fibers in the walls of the veins and the sinuses are suggestive of an erectile tissue and close relation to the generative apparatus.

11. **Chronic Atropin Poisoning.**—Tyrrell reports the case of a man who, because of a slight cloudiness in the center of the cornea, the result of the application of a caustic, or of granular lids, made use of a solution to make the pupil larger, so that he might see around the scar. He used this solution for fourteen years with good effect, so far as his eyes were concerned, but with disastrous results to his health. Under an appropriate treatment the patient made a complete recovery.

13. **Significance of Occult Hemorrhages in Stomach Affections.**—The observations of Friedenwald and Rosenthal agree in every respect with the conclusions arrived at by other investigators. Occult blood was not found in 92 examinations in 47 cases of chronic gastritis; in 42 examinations in 15 cases of atony of the stomach; in 108 examinations in 42 cases of hyperchlorhydria; in 21 examinations in 8 cases of hypersecretion; in 16 examinations in 9 cases of acute gastritis; in 57 examinations in 25 cases of nervous dyspepsia. So significant is the fact that they have frequently been enabled to rely on the constant absence of this sign as evidence sufficient to exclude the presence of ulcer and cancer, and on the other hand as evidence in favor of the presence of either a gastritis or some form of gastric neurosis.

Thirty-five cases of ulcer of the stomach were examined as to the presence of occult blood in the stools. This condition was found in 26, or 74 per cent. It was not noted, however, at every examination; most frequently, however, before the patient had been placed under treatment and when the pain and nausea were extreme; after the patient had been served in normal rats of the same age. On a third rat ticks were fed and the parasites appeared in the peripheral circulation after five days, the usual incubation period.

14. **Gallstones Passed by Rectum.**—The main interest in the case reported by Dickson lies in the fact that three gallstones of large size were evacuated from the gall bladder by natural means. They had evidently ulcerated through the fundus of the gall bladder into the large intestine, after these two organs had become attached to each other by adhesions, then passed slowly down the large intestine, and became surrounded by a mass of feces, causing partial obstruction of the bowels which was relieved by the repeated use of large enemata. The stones when fitted together made a mass 3½ inches long, forming a complete cast of the interior of the gall bladder. That they passed down by the cystic and common bile ducts is very improbable, there having been no severe attack of jaundice, and moreover the stone which formed a cast of the fundus of the gall bladder was the first to appear in the rectum, and preceded the others by about four months. Ulceration into, and passage by way of, the small intestine is also excluded by the clinical history, and stones of such large size, if they had traveled by the last-named route, would almost certainly have become impacted at the ileocecal valve. A small ischiorectal abscess formed a few days after the first stone was passed, probably from fissuring of the stretched mucous membrane of the anal canal and infection with organisms. This was opened—about one and a half ounces of pus being evacuated—and rapidly healed up; the patient is now in good health. The three stones, after drying, weighed 1.71 ounces.

Presse Médicale, Paris.

19 (XIV, No. 37.) L'osmose en physiologie et en pathologie. L. Hallion.
20 *Les hallucinations inanitionelles chez les "rescapés" de Courrières (in the long buried miners). H. Lassignardie.
21 (No. 54.) *Cure radicale de la hernie inguinale. M. Savariaud.
22 Obtention du lait normal asceptique (milk). G. Linas.
23 (No. 55.) *L'aphasie sensorielle. Sa localisation et sa physiologie pathologique. J. Dejerine.
24 Successful Electric Treatment of Cicatricial Cheloids—Traitement des chéloides par l'effluve de haute fréquence. F. Redard and G. Barret.

20. **Hallucinations from Starvation.**—Lassignardie's thesis in 1879 (Bordeaux) was devoted to the psychic disturbances consequent on deprivation of food. His conclusions were to the effect that fasting promoted the development of the intellectual faculties, especially the imagination. In actual starvation the character changed and became irritable and cruel, with loss of memory and will power, and development of hallucinations, agreeable or distressing. He has recently been studying the miners who were buried for so many days in the mine at Courrières. One miner was not released until after an interval of 25 days. He frequently imagined himself at home and talked with his wife and imagined that he found scraps of bread, which he ate with relish. Like most of the others, he frequently imagined that he saw bright lights before him. All the miners said that they became very irritable and frequently quarreled. They all had hallucinations, generally agreeable, but nearly all retained their reason, only a few being actual dupes of their imagination.

21. **Radical Treatment of Inguinal Hernia.**—The points in which Savariaud has modified the Bassini technic are in the restoration of the abdominal wall and in the shortening of the spermatic cord in case of a varicocele or lipoma in the cord. The article is illustrated.

23. **Sensory Aphasia.**—Dejerine presents evidence to confirm the assumption that disturbances in speech and mental disturbances are due to entirely different processes.

27. **Sterile Catgut, Ready for Use.**—Karewski sterilizes the catgut in a special glass vial, open at both ends, in the fumes of boiling 70 per cent. alcohol. The vials are exposed for an hour to the fumes at a temperature of 78.8 or 81 C. The catgut is wound by a yarn-winding machine and is boiled first in glycerin, then extracted cold in ether and alcohol. Each vial is partly filled with alcohol, containing from 1 to 3 per cent. glycerin, and is heated again to 103 C. for an hour. The open ends of the vials are then fused and they are kept in a vessel of alcohol ready for use. Tests with anthrax spores showed that they are destroyed by this method of sterilization. The vials have a small neck with a bulging part above, terminating in a long narrow tip. The end of the catgut is drawn out through this long top of the vial, a knot in the catgut preventing its slipping back, the knot fitting into the bulging part. The vial is opened by breaking the neck just below the bulging part. The article is illustrated, showing the special contrivances for large clinics and for hospital use.

Berliner klinische Wochenschrift.

25 (XLIII, No. 20.) Zur baktericiden Wirkung radioactiven Mineral-Wassers. M. Rheinboldt.
26 What Value Have Experiments on Frogs for Application in the Clinic?—Welchen Wert haben Digitalis-Froschversuche für die Praxis? Focke.
27 (No. 21.) *Ueber gebrauchsfertiges, dauernd sterlles aseptisches Catgut. Karewski.
28 *Das Experiment in der Balneotherapie. F. Heinsheimer.
29 Reply to Bashford's "Experimental Cancer Research."—Erwiderung auf den Artikel des Hern Dr. Bashford; "Einige Bemerkungen zur Methodik der experimentellen Krebsforschung." P. Ehrlich and H. Apolant.
30 *Influence of Domestication on Origination of Disease.—Einfluss der Domestikation auf die Entstehung der Krankheiten. D. v. Hansemann. (Concluded.)
31 Ueber Antiamboceptoren. C. H. Browning and H. Sachs. (Concluded.)
32 Mountain Climate and Sea Air in Children's Affections.—Höhenklima und Seeluft als Heilpotenzen bei Kinderkrankheiten. R. Fischl.
33 *Serpiginous Corneal Ulcer.—Hornhautgeschwülste. Helbron.
34 *Retained Enemas.—Ueber Bleibe-Klystiere. A. Pollatschek.
35 *Balneotherapy in Gynecologic Affections.—Badekuren bei Uterusmyomen und exsudativen entzündlichen Erkrankungen der weiblichen Geschlechtsorgane. L. Nenadovics.

28. **Experimental Research on Balneotherapy.**—Heinsheimer has been studying on dogs with Pawlow fistulæ the effect of various mineral waters, bitters, etc., on the secretions. The results harmonize with those observed in the clinic.

30. **Influence of Domestication on the Origin of Diseases.**—This article was presented as one of the principal addresses at the Lisbon International Medical Congress and was mentioned in the notice of the congress in the last volume of THE JOURNAL. As examples of the degeneration that follows domestication, von Hansemann mentions that neurasthenia and hysteria are frequently observed among animals. He states that he knows of instances of imaginary gestation in the dog. The abdomen became enlarged, the milk glands swelled, and colostrum was secreted, the same as in an imaginary human pregnancy, and all the signs subsided after the normal term of gestation. He also mentions a dog that was given injections of morphin daily for a time on account of an operation. After the injections were discontinued the dog suffered from attacks of pain every day at the hour of the injections, but he quieted down at once if a little water was injected in place of the former morphin. Mental disturbances occur among uncivilized peoples, but the persons thus affected are soon exterminated and do not propagate and perpetuate the neurotic tendency. The increasing numbers of neuropathic individuals parallel the progress of civilization, and might even be used as a criterion of the stage of civilization in a special land. Animals in liberty and untrained children do not eat more than appetite calls for, but domesticated animals and children, tempted to eat by savory viands, soon acquire the habit of eating more than they require. In respect to tumors he remarks that wild animals and uncivilized human beings seldom live to reach the cancer age, which may explain the rarity of cancer among them. Tuberculosis in persons occupied in dust-laden air does not affect the apices. The tuberculous lesions are found where the inhaled dust is most accumulated. This form of tuberculosis is most certainly a "domestication affection." The same might be said of ordinary tuberculosis affecting a person changing to different conditions of life. Japanese students in Germany are liable to acquire tuberculosis, as also German students in Japan, showing the importance of a changed manner of life in the origin of the disease. This fact is also evidenced by the frequency of tuberculosis in prisons, etc. True gout is a typical example of a "domestication affection," he thinks. He has never known of its occurrence spontaneously in animals or among uncivilized peoples, and the same can be said of rachitis. The latter is never found

among people living in the open air or in well-ventilated houses who keep the children out of doors and refrain from bundling them up much in infancy. In conclusion he mentions the evil effects of wearing deforming shoes, corsets and hard hats as "domestication affections."

33. **Serpiginous Ulcer of the Cornea.**—Helbron urges promptness in treating ulcer of the cornea, as many eyes are still lost every year from progressing hypopyon-keratitis. Antipneumococcus serum is a valuable adjuvant, but can not be relied on exclusively, he thinks. He believes in applying the galvano-cautery even in the very earliest stages, using it at a low red heat, so as not to destroy the sound cornea beneath in the incipient cases, supplementing it with perforation and cleansing out the ulcer excavation in severe cases. Boric acid or sublimate salve afterward, he states, is more effectual than iodoform.

34. **Retained Enemas.**—Pollatschek uses small enemas of 50 or 100 or 150 gm. of Carlsbad waters at a temperature of about 50 C. in the treatment of chronic diarrhea. The infused fluid is retained and the procedure is repeated until the patient is able to retain the enema. He has found these small, hot enemas a very reliable palliative and curative measure. Boiled water and salt solution have also been found useful by his patients after their return home, but he has no personal experience except with the Carlsbad Sprudel water.

35. **Balneotherapy in Gynecologic Affections.**—Nenadovics reviews what has been written on this subject and his own experience, all tending to show, he thinks, the value of balneotherapy in gynecologic affections as soon as the febrile stage is past and the patient is able to travel. The ability to travel depends on the absence of fever and the general condition; the local pain and tenderness may be disregarded in cases with exudation and inflammatory processes. Mud baths, he states, are especially useful in case of uterine myomas in young women of delicate constitution, debilitated from hemorrhages, and also in chlorosis.

Münchener medizinische Wochenschrift.

36 (LIII, No. 21.) Nachweis von Antituberkulin im tuberkulösen Gewebe (tissues). E. Weil and H. Nakajama.
37 Zur Kenntnis und Beurteilung des kriminellen Aborts. Schickele.
38 *Zur Diagnose der kongenitalen Dünndarm-Atresie, unter bes. Berücksichtigung der Untersuchung des Mekoniums, K. Walz.
39 Therapeutische Verhalten der akuten Otitis Media mit Berücksichtigung ihrer verschiedenen Aetiologie. Scheibe.
40 Zum Nachweis der Azetessig-Säure im Harn (aceto-acetic acid in urine). L. Lindemann.
41 Technisches zur Bierschen Stauung (suction treatment). F. Kuhn.
42 Die medizinische Psychologie mit Bezug auf Behandlung und Erziehung der angeborenen Schwachsinnigen (training of feeble-minded) A. Uffenheimer.
43 (No. 22) *Aktive Immunisierung gegen Infektions-Krankheiten. Dieudonné.
44 *Cultivation of Typhoid Bacilli from Blood.—Züchtung von Typhusbazillen aus dem Blut. Fornet.
45 *Formalin in Biologic Blood Test.—Anwendung von Formalin bei dem Uhlenhuthschen Verfahren. W. Loele.
46 History of Spinal Anesthesia.—Zur Geschichte der Rückenmarksanasthesie. August Bier (Bonn).
47 *Rest in the Open Air for Gallstone Patients.—Liegehallen für Gallensteinkranken. F. Fink.
48 Zur Röntgen-Bestrahlung der Leukämie. J. Arneth.
49 *Metabolism in Leukemia under Röntgen Treatment.—Untersuchungen über den Stoffwechsel bei Leukämie während der Röntgenbehandlung. I. Rosenstern.

38. **Diagnosis of Congenital Atresia of the Small Intestine.**—Walz describes the postmortem findings in a case of atresia of the small intestine associated with horseshoe kidney, and shows that the atresia is due to embryonal malformation. Meconium can be passed even with complete atresia of the duodenum. In every case of continuous vomiting by a newborn infant the meconium should be histologically examined, as operative treatment of atresia of the duodenum can count on success only if done early. If there is no spontaneous passage of meconium, then some can be obtained with an enema. Entire absence of lanugo hairs in the meconium, he states, is a positive sign of complete occlusion of the duodenum before the fifth month of embryonal development. This diagnosis is strengthened by the absence at the same time of pavement epithelium and of elements of food (droplets of fat).

43. **Active Immunization Against Infectious Diseases.**—This communication was the summarizing report on this subject, read at the Lisbon International Medical Congress.

44. **Cultivation of Typhoid Bacilli from Coagulated Blood.**—Fornet states that he was able to cultivate typhoid bacilli from the blood in 14 out of 19 cases of typhoid fever long before the agglutination test gave positive findings. The bacilli in unmodified blood all died, either from the bactericidal power of the blood or from the mechanical injury from the fibrin network. When bile is added to the blood it breaks up the fibrin network and releases the bacilli, so that they can be cultivated from the blood afterward. The clot of blood left from the agglutination test is placed in a test tube with about 5 c.c. of bile from the slaughter house and put in the incubator over night. A very small amount of blood is sufficient for the purpose.

45. **Improved Formalin Technic for Biologic Test.**—The great difficulty with the Uhlenhuth-Wassermann biologic precipitation test has always been the rapid spoiling of the blood and meat extracts, and the necessity that the material with which the animals are injected must be sterile. This difficulty can be obviated by adding formalin to the extracts. Loele found that the best mixture for the purpose was 2 per cent. formalin and 0.6 per cent. sodium chlorid in distilled water. This is mixed half and half with the blood to be injected into the rabbit to produce the prepared serum. The mixture found most effectual for preserving the extracts of blood and tissues was 75 parts of distilled water, 15 parts of calcium bichlorid (1 per cent. solution in distilled water); 10 parts of magnesium chlorid, and 1 part formalin. Precipitation occurs with remarkable distinctness with this alkaline formalin mixture.

47. **Rest in the Open Air for Gallstone Patients.**—Fink proposes to have erected at Carlsbad a "reclining hall" (Liegehalle) for gallstone patients, for whom rest and warmth to the abdomen for an hour or two or longer daily have been ordered. He believes that those suffering from cholelithiasis thrive much better when they spend the entire afternoon lying down, with very little exercise in the mornings. He would like *to have open shelters provided, as for the tuberculous, and the* Carlsbad authorities are now discussing ways and means to carry his proposal into effect.

49. **Metabolism in Leukemia Under Roentgen Treatment.**—This long article concludes with a warning that the general condition should be watched carefully and Roentgen treatment be suspended, notwithstanding a progressive reduction in the leucocytes, if anything indicates that the action of the Roentgen rays is going beyond the desired effect. The number of reds and the proportion of hemoglobin must be supervised, and also the elimination of uric acid. If the latter shows no signs of reduction, this must be accepted as a signal for special caution.

Therapie der Gegenwart, Berlin.

Last indexed, page 467.

50 (XLVII, No. 4.) Present Status of Cancer Research.—Der heutige Stand der Krebsforschung. H. Apolant.
51 *Zur Behandlung hartnäckiger Ischias-Fälle mit perineuraler Infiltration (sciatica). Umber.
52 *Zur Behandlung der chronischen Verstopfung (obstipation). O. Kohnstamm.
53 Diagnose und Therapie der spindelförmige nDilatationen der Speiseröhre (fusiform enlargement of esophagus). B. Auerbach.
54 Behandlung der oberen Luftwege mit Quillajarindendecoct (infusion of quillaja). Zickgraf.
55 Zwei Fälle von chronisch-ankylosierender Entzündung der Wirbelsäule (spine). R. Zuelzer.
56 Zur Diagnose und Therapie des chronischen Dickdarm-Katarrhs (of large intestine). W. Zweig.

51. **"Infiltration" Treatment of Sciatica.**—Umber has had excellent results in 14 cases of chronic, long rebellious sciatica treated with perineural injections by a modified infiltration technic. He injected from 70 to 100 c.c. of a 1 per thousand solution of eucain with 8 per thousand sodium chlorid. Nine patients were cured completely by a single or once-repeated injection. One, a syphilitic, was only slightly improved. In another patient paresis of the peroneus developed tardily after the one effectual injection. In some cases slight twinges were felt later in the peroneus region, but they subsided after a small amount of the fluid had been injected at the sensitive

point (30 c.c.). It was truly remarkable, he says, to see patients walking about entirely free from pain the day after the injection, when up to that time they had suffered continuous agony unmodified by any treatment. The last four patients were injected with physiologic salt solution alone, without the eucain, and the results were exactly as good as with the anesthetic. He injected a little larger quantity, up to 170 c.c. A single injection of this kind was followed by complete relief from pain in forty-eight hours. This latter technic is so simple and free from any danger that he advocates it for general adoption, instead of the eucain for fear of encountering an idiosyncrasy to this drug. He cites a case on record of death from 0.08 gm. of eucain. Lange of Leipsic, was the first to practice this "nerve infiltration," as was mentioned at the time in these columns, page 586 of vol. xliv.

52. **Treatment of Constipation.**—The principal features of Kohnstamm's successful treatment are the avoidance of meat and the ingestion of milk three times a day at least. He believes that worry has a constipating effect, and that the focussing of the will power is liable also to have an inhibiting influence on the visceral functions.

Gazzetta degli Ospedali, Milan.

57 (XXVII, No. 33.) Ricerche batteriologiche sulla infezione tifoidea. G. Curlo.
58 *La tripsina, fermento solubile proteolitico del pancreas, per la cura del cancro. G. Zanoni.
59 (No. 36.) *Contributo critico-sperimentale allo studio dell' etiologia della rabbia (rabies). C. S. Materazzi.
60 *Polmonite epidemica e infezione pneumonica famigliare. A. De Blasi.
61 *Il sintoma palmo-plantare di Philipovicz nella febbre tifoidea. G. Minciotti.
62 Relations Between a Boil and Paranephritis.—Sui rapporti fra furuncolo e paranefrite suppurata. F. Bindi.
63 Sulla pretesa coltivazione delle amebe parasite. P. Barbagallo.
64 (No. 39.) La patogenesi della anemia da anchilostoma. A. Berti.
65 Su la persistenza di laringo-stenosi dopo la intubazione o la tracheotomia nei bambini. G. Copetti.
66 *Nuovo processo per l'allacciatura dell'arteria innominata (ligature). E. Giordano.
67 Uroscopio tascabile per l'esame delle urine al letto dell' ammalato (bedside examination of urine). E. Ronzani.
68 (No. 43.) *Sulla diagnosi delle alterazioni funzionali del fegato e della sifilide epatica (functional disturbances in liver). E. De Renzi.
69 Sulla variabilita del bacillo del tifo nei differenti tessuti dell' organismo. V. Maragliano.
70 (No. 48.) Coagulabilita e xantocromia del liquido cerebrospinale in un caso di lesione della coda equina. L. Fornaca.
71 *Sulla formazione e sul valore semeiologico del muco e delle muco-membrane. A. Riva.

58. **Trypsin in Treatment of Cancer.**—Zanoni has been repeating Beard's experiments with pancreatic ferment in the treatment of cancer. His results were likewise positive; the parts of the cancer in contact with the ferment became destroyed; granulations from the ear, and nasal polyps placed in the ferment in a test tube were rapidly digested. A superficial mammary mouse cancer became hollowed out under the influence of the trypsin, but without pain and without eschar formation. In proportion to the amounts injected into the mouse tumors, it would be necessary to inject a human being with 177 c.c. for a weight of 70 kg.

59. **Etiology of Rabies.**—Materazzi's researches confirm those of others, sustaining the etiologic importance of the Negri bodies in rabies. They can be detected and the diagnosis confirmed in 24 hours, he says, by simple microscopic examination of the fresh hippocampus, and with a minimal amount of material.

60. **Epidemic Pneumonia.**—De Blasi has observed an epidemic of pneumonia, affecting 60 persons, mostly in groups, and the disease displaying a marked contagious character. A pleural effusion was evident in about half the cases, but it was never purulent.

61. **Yellow Patch in Palms and Soles in Typhoid.**—Philipovicz regards the yellowish discoloration of palms and soles as pathognomonic of typhoid fever. In one of Minciotti's patients the yellow patches were painful. The symptom was most marked in the left palm and sole. The tint was a pronounced orange, and gradually subsided to normal. The pain first attracted attention to the left sole about the eighth day of the disease.

66. **Ligature of the Innominate Artery.**—Giordano's technic aims to open up the field extensively while respecting the points of attachment of the muscles of the region. It has shown many points of advantage over the ordinary technics in his tests on the cadaver. The sternum is divided with the wire saw introduced beneath, sawing on a level with the second rib. The clavicle is then sawed in the same way. The incisions and sawing outline a bone-muscle-skin flap, shaped like a trapezoid, which, when lifted up, exposes amply the innominate artery.

68. **Syphilides of the Liver.**—De Renzi discusses a case of syphilitic, interstitial hypertrophic inflammation of the liver, with chronic icterus. Marked improvement followed mercurial treatment. The icterus had been the first symptom, appearing eighteen months before. The liver, spleen and some of the glands became gradually enlarged. There was no alimentary glycosuria; the functions of the liver were evidently retained and exaggerated. The patient had long lived in a malarial region.

71. **Membranous Enteritis.**—Riva regards hypersecretion of mucus as a means of defense on the part of the organism to protect the mucosa lining the intestinal canal. He has found that bile has an anticoagulating action on the mucus, and has a curative effect in case of hypersecretion of mucus with accumulations of mucous casts in the stools. The mucomembranous formation is probably due to increased production of mucus with simultaneous reduction of anticoagulating substance, and is generally the expression of inflammation of the gastrointestinal mucosa. Its action is injurious, as it obstructs the free course of the feces and provides nooks and recesses where microbes and toxic substances can accumulate. He uses a special preparation of bile and has found it useful in treating cases of mucomembranous enteritis, as he previously reported.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PROPHYLAXIS AND TREATMENT OF INTERNAL DISEASES, Designed for the Use of Practitioners and of Advanced Students of Medicine. By F. Forchheimer, M.D., Professor of Theory and Practice of Medicine and Clinical Medicine, Medical College of Ohio, Department of Medicine of the University of Cincinnati, etc. Cloth. Pp. 652. Price, $5.00 net. New York: D. Appleton & Co., 1906.

OPERATIVE TREATMENT OF PROLAPSE AND RETROVERSION OF THE UTERUS. By J. I. Parsons, M.D., M.R.C.P., M.R.C.S., Physician to the Chelsea Hospital for Women, Late Surgeon Royal Maternity Charity, Fellow of Royal Medical and Chirurgical Society, Obstetrical Society of London. Cloth. Pp. 90. Price, $1.25 net. New York: William Wood & Co.

PHLEBITIS AND THROMBOSIS, The Hunterian Lectures, Delivered Before the Royal College of Surgeons of England, in March, 1906, by W. Haward, F.R.C.S., Hunterian Professor of Surgery and Pathology in the Royal College of Surgeons of England, etc. Cloth. Pp. 88. Price, $1.50 net. New York: William Wood & Co.

URETHROTOMIES AND KIDNEY CAPSULOTOMY. In Diseases and Injuries of the Urinary Organs. By R. Harrison, F.R.C.S., Past Vice-President and Hunterian Professor of Pathology and Surgery, Royal College of Surgeons, etc. Cloth. Pp. 96. Price, $1.25 net. New York: William Wood & Co.

MEDICAL AND SURGICAL REPORT OF THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK. Vol. VII, March, 1906. Edited by J. S. Thacher, M.D., and G. Woolsey, M.D. Paper. Pp. 234. New York: Trow Directory Printing and Bookbinding Co., 1906.

LECTURES ON MIDWIFERY FOR MIDWIVES. By A. B. Calder, M.B., M.R.C.S., Lecturer on Midwifery to London County Council, to St. Mary's Midwifery Training School, Fulham, etc. Cloth. Pp. 274. Price, $2.00 net. New York: William Wood & Co.

AIDS TO CHEMISTRY. By T. A. Henry, D.Sc., Chief Assistant Chemist, Scientific and Technical Department of the Imperial Institute, South Kensington. Cloth. Pp. 316. Price, $1.25 net. New York: William Wood & Co.

AIDS TO SURGERY. J. Cunning, M.B., B.S., F.R.C.S., Senior Resident Medical Officer Royal Free Hospital. Cloth. Pp. 394. Price, $1.25 net. New York: William Wood & Co.

AIDS TO SURGICAL DIAGNOSIS. By H. W. Carson, F.R.C.S., Surgeon Tottenham Hospital. Cloth. Pp. 140. Price, $1.00 net. New York: William Wood & Co.

REPORT OF THE COMMISSIONER OF EDUCATION for the Year Ending June 30, 1904. Vol. II. Cloth. Washington: Government Printing Office, 1906.

AIDS TO PHYSIOLOGY. By P. T. B. Beale, F.R.C.S. Cloth. Pp. 239. Price, $1.25 net. New York: William Wood & Co.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

Vol. XLVII. CHICAGO, ILLINOIS, SEPTEMBER 1, 1906. No. 9.

Addresses

THE DISTRIBUTION OF AFFERENT NERVES IN THE SKIN.[*]

PROF. MAX VON FREY,

WÜRZBURG, GERMANY.

While the question as to how the ventral roots of the spinal nerves are engaged in the innervation of the muscles is in its main features cleared up, especially through he researches of Sherrington,[1] our insight into the disribution of the afferent fibers is still very incomplete. Here again the work of Sherrington represents by far he most important contribution, his experiments being he more interesting because of their having been made mostly on monkeys.

Sherrington[2] determined the extent of the cutaneous areas of the dorsal roots of all the spinal nerves and found that these areas are always continuous for each single root and that they overlap to a considerable extent. His method of observation was that of remaining anesthesia, as Head has termed it. The skin field of a spinal root is isolated by dividing as many adjacent roots as is necessary to surround the skin field in question by a totally anesthetic zone. By pinching the skin and watching the reflexes thus called into action the borders were defined.

This way of proceeding neglects the functional differences of the afferent fibers, and its results are, therefore, applicable to the sensory disturbances in man only with certain restrictions. Sherrington[3] tried to make up for this deficiency by a series of experiments on tame monkeys, cutting one or more of the dorsal roots and examining the field, thus rendered anesthetic or hypesthetic, with a variety of stimuli. He generally found the heat-sensitivity and the pain-sensitivity more impaired than the tactual sensitivity, which means that "the pain-field and the heat-field of a single sensory spinal root, at least in the case of certain spinal nerves, are less extensive than is the touch-field of the same root." He recognizes that the problem is but imperfectly accessible by researches on animals and awaits fuller information from the study of clinical cases.

In dealing with sensory disturbance in man after injury to cutaneous nerves, the first thing to be considered is what kind of sensations belong to the normal skin and to the underlying tissues. The subject has been treated by a large number of physiologic and psychologic investigations, and I propose, so far as I am able, to draw a short sketch of their issue.

Most physiologists agree that the sensory functions of the skin are based on four fundamental qualities mediating the sensations of warmth, cold, touch and pain. Careful investigations have placed it beyond doubt that corresponding to these functions the nerve-supply to the skin must be a fourfold one. Blix was the first to note that the sensibility of the skin to warmth, cold and touch varies widely within a given area, provided the stimuli act on a very small part of it. He ascribed this fact to the existence within the skin of terminal organs of specific function, and he regarded the most irritable points as their projection on the surface. Goldscheider has confirmed and amplified the conclusions arrived at by Blix, but was often misled in his observations by not using quantitative methods. Later I was able to show that the spots most sensitive to touch had a peculiar relationship to the hairs, lying always on the windward side of the hair and covering its root or sheath.[4]

The position of these touch-spots once ascertained, it is easy to prove that they react in a specific way to various kinds of stimuli. In using, for instance, the head of a pin as an electrode, the touch-spots respond to an alternating current of minimal strength by a vibrating sensation very similar to that evoked by a tuning fork brought in contact with the skin. In the spaces between the touch-spots no such sensation is provoked, but the same current or even a weaker one is felt as a non-vibrating, permanently painful prick.

We have, then, two different sensations evoked by the same minimal stimulus, and it depends on the place where the stimulus is applied as to which one is produced. The most probable explanation of this fact is that the effect depends on the kind of terminal organ excited by the stimulus. The one reacts quickly enough to transmit separately the rapid alternations of the current; the other, too slow to do so, is kept by them in a condition of constant irritation. In what part of the nervous system this difference of reaction is seated, whether in the nerve fibers, in the terminal organs, in certain central parts or, as seems not improbable, in all three of them, can not be decided at present. But it is clear that the nervous impulses belonging to the two sensations must be transmitted to the brain by different paths, a conclusion which quite agrees with clinical observation.

As regards the temperature sensations, similar circumstances prevail. If the skin is examined with bits of wire, kept at temperatures a few degrees above or below the temperature of the skin, it is easy to map out a large number of cold-spots and a more restricted number of warm-spots. They represent minute, but unchanging areas on the skin, in which the sensation cold or warm is aroused by a minimal stimulus, that is to say, by a stimulus not felt in the intermediate spaces.

In applying thermal irritants to these points generally only one kind responds. If the temperature of the skin is lowered the cold-spots are stimulated; if it is raised the warm-spots come into play. It is impossible to give definite temperatures as liminal values, since the physiologic zero point changes, not only as regards time, but also in different parts of the skin, as, for instance, in passing from the volar side of the hand to the dorsal one, or from the covered parts to the uncovered ones and so on. Some stimuli act on both the warm and the cold-spots. Mechanical and electrical irritations have this power and under certain circumstances thermal irritation also. With temperatures between 45° and 50° C. one is generally sure to stimulate not only the warm-spots, but also the cold-spots, evoking from the latter a sensation of cold, which I have termed the paradoxical cold sensation. It is, therefore, quite possible that one and the same stimulus is felt both as warm and cold. This can be conveniently shown in the following way: By means of a small lens the sunlight is concentrated on a part of the skin where the warm and cold-spots have been determined beforehand. By bringing the focus to a warm-spot the sensation of warmth is produced, on a cold-spot the sensation of cold. In the intermediate spaces the concentrated light is either felt as painful or is not felt at all, according to its intensity. The touch-spots never respond, being not accessible to any kind of thermal stimulus. The experiment shows in a very striking manner the specific nature of the afferent nerve-fibers of the skin.

---

[*] Address before the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Jour. of Physiology, 13, 621, 1892.

[2] Phil. Trans., 1893, 184, B. 641; 1898, 190, B. 45.

[3] Jour. of Physio., 27, 360, 1892.

[4] Abtr. Ges. d. Wiss, Leipzig, 1896, 23, 175.

From this and other observations the conclusion may safely be drawn that the nerve-supply to the skin is a fourfold one. To use a rather schematic but illustrative expression, it can be said that the surface of the skin is divided into a very large number of minute areas or patches, each of which represents the field of distribution of the nerve fibers belonging to one or other of the above named four qualities. According to a rough estimate, there are on the skin of the trunk and limbs about 30,000 warm-spots, 250,000 cold-spots and half a million of touch-spots. As to pain, reliable determinations are wanting. It is easy to prove that the sensibility to a painful stimulus passed across the skin varies considerably from place to place, but it is difficult to mark out with the same exactness as can be done for the three other sensations, spots of maximal sensibility. The reasons for this deficiency are manifold, one being, no doubt, the richness of the skin in nerve fibers of this sort.

I have often been told that common experience contradicts the conception of the nervous supply of the skin as here sketched, in that a warm, a cold, a blunt or a sharp object passed over the skin is everywhere recognized in its proper qualities, and that the sensation seems a continuous one throughout. In granting that the afferent nerves are nowhere mingled into a homogeneous or uniform layer and that the surface of the skin is, so to speak, checkered by a variety of terminal organs, the expectation is naturally raised that an object moving over the skin ought to provoke a sensation varying in quality and changing in intensity. I have given already a few instances which prove that this expectation is by no means an erroneous one. If the moving object is of very small size and its stimulating power not far above the threshold value, the sensation is in very fact a discontinuous one, varying generally both in intensity and quality. Besides there are to be found in every normal skin regions where one or two of the typical sensations are wanting, where cold is felt but not warmth, pain but not touch, and *vice versa*.

Still, the objection just raised holds good under the usual circumstances and must be somehow accounted for. I think the explanation lies in a peculiarity, belonging to all sensory organs, which for the sake of convenience I shall term the irradiation of stimuli. There are two kinds of irradiation, a physical and a physiologic.

Physical irradiation consists in the spreading of the irritation over a larger number of terminal organs than the nature of the stimulus itself would seem to demand. This spreading is caused by certain physical qualities of the tissues or parts conducting the stimulus to the terminal organs, as, for instance, by the imperfections of the dioptric apparatus in the eye, by the diffusion in the saliva of the substances affecting taste, etc. In the skin, thermal differences and mechanical deformation are apt to spread to a considerable extent, with the effect that, unless special precautions are employed, nearly every stimulus is sure to irritate more than one terminal organ. This circumstance explains the difficulty or inexpediency of mapping out touch-spots or temperature-spots over such parts as possess a thick epidermal layer, as the volar side of the hand, the sole of the foot, etc.

Of far greater importance is the phenomenon to which I have alluded as physiologic irradiation. The points of a pair of compasses set on the skin are not discriminated as separate if the distance is reduced to a certain liminal value, which differs widely in various parts of the skin. This fact was recognized by E. H. Weber, who used it as a means to measure the acuteness of local discrimination. His conception was that the liminal distance had an anatomic bearing in that it depended on the distribution and ramification of nerves in the skin. This view had to be abandoned after several investigators had found that the liminal distance could be much reduced in applying the two stimuli not simultaneously but successively. In using this device and choosing a suitable time-interval between the two stimuli, I was able to show that any two neighboring touch-points may be discerned, though it is not possible under these circumstances to judge their relative position.[5]

The enormous differences between the liminal distances found in simultaneous and successive stimulation can not be explained on an anatomic basis, but point to a difference in the spreading of the irritation, being evidently facilitated by simultaneous stimulation. This is proved, moreover, by the fact that simultaneous irritation of two neighboring touch-points is always felt more strongly than that of a single one, which means that the two irritations are added, one to another, as is the case with stimuli successively applied to the same terminal organ. It is, therefore, right to say that the localization of a given stimulus and the intensity with which it is felt depends not only on the physical properties of the stimulus and on the number and quality of the terminal organs engaged, but also on the conditions existing in the central nervous system.

I wish to lay special stress on this point, since it helps to clear up some very interesting observations recently recorded by Dr. Head.[6] In order to study the consequences of nerve injury more accurately than was possible on the patients of the London Hospital, he submitted himself to a very heroic and at the same time very valuable experiment. In April, 1903, the external and radial cutaneous nerves of his left forearm were divided in the neighborhood of the elbow, and after small portions had been excised the ends were united by silk sutures.

---

[5] Würzburger Sitzungsber., 1899 and 1902.

[6] Head, H.: The Afferent Nervous System from a New Aspect, Brain, 1906, vol. ii, p. 99.

Dr. Head describes the consequences of the operation in the following way: "It produced loss of all forms of cutaneous sensibility over an extensive area on the radial half of the forearm and back of the hand. Stimulation with cotton-wool, the prick of a pin, the application of all forms of heat and cold, were unappreciated, and the two points of the compasses could not be discriminated, even when separated to the furthest extent possible. But if this part was touched with the point of a pencil, the head of a pin, or even with the ball of the finger, the stimulus was at once appreciated and the point of application localized with remarkable accuracy" (p. 102). "When the hairs were pulled, the elevation of the skin produced no effect on the consciousness. Pressure, which previously caused a sensation, was no longer appreciated when applied to the skin lifted from the subcutaneous structures to form a ridge. All sense of form or size was lost" (p. 103).

For a long time past neurologists have maintained the view that in speaking of the perception of pressure a distinction must be drawn between light pressure or touch and strong pressure or, as Strümpell more appropriately calls it, deep pressure. The perception of light pressure, of form and of size, is due to the skin, thanks to the sensibility of the touch-points and their highly developed discriminating and localizing power. The corresponding terminal organs are ring-like arrangements of non-medullated nerve-fibers encircling the hair follicles and, in the hairless parts of the skin, the corpuscles of Meissner.

The perception of deep pressure is much less accessible to investigation, because, under normal conditions, it is hidden by the superior sensibility of the skin. But it is known from clinical cases, particularly of syringomyelia, that the sensibility of the skin may be impaired or even lost, while the perception of deep pressure is apparently unaltered. So far as I am aware a minute examination of the state of sensibility in such cases has never been made. Undoubtedly a certain amount of localization remains and there is no ataxia in executing spontaneous movements, a disturbance never wanting when deep sensibility is lost. As to the terminal organs that are responsible for this kind of sensibility, Sherrington has rendered it very probable that they are to be looked for in the so-called "muscle-spindles." According to him, from one-third to one-half of the medullated fibers of the muscular nerve trunks consist of small-sized fibers connecting the spindles with the spinal ganglia.[7] There are, besides, terminal organs called corpuscles of Pacini and Golgi-Mazzoni to be found in the fibrous membranes, in tendons and joints. Head's experiment may be regarded as a crucial test, establishing the correctness of the above views.

A fact which puzzled Dr. Head very much he describes in the following way: "Over the radial half of the dorsum of the wrist a triangular area of skin became entirely insensitive to prick in consequence of the operation. But this same area remained sensitive to touches with cotton-wool and also, in a limited degree, to warmth. The area was capable of appreciating temperatures between 36 and 45° C. It was, however, entirely insensitive to temperatures of 50° C. and above."

If this description is to be taken literally it is difficult to understand, and, I think, very improbable. I venture to suggest the following interpretation: Temperatures of 50° were felt neither hot nor burning, but simply warm, just like the lower temperatures. If my conjecture is right, the observation can be easily explained by certain peculiarities of the temperature-sensations familiar to physiologists.

I have already spoken of the so-called paradoxical sensation of cold brought about by irritating the cold-spots with temperatures of 45° and higher ones. If the temperature of the normal skin is slowly raised over the physiologic zero-point, first the warm spots alone are irritated and the sensations lukewarm or warm evoked, according to the intensity of the stimulus. When the temperature reaches 45° the sensation changes in a peculiar way owing to the fact that the cold-spots join in the irritation, mingling their specific sensation with the warm one. Alrutz has proposed to reserve the term "hot" exclusively for this combination, and I gladly accept his suggestion. If the temperature is raised still higher pain is evoked, and the sensation assumes a burning character.

Now, if some part of the skin has lost the sensations of cold and pain, it is to be expected that all temperatures above the physiologic zero-point will be felt simply as warm, and that the sensations hot and burning will be absent. The possibility remains that the higher temperatures will not be felt at all, since it is a well-known fact that temperature-spots tire very quickly.

Another curious observation was made by Dr. Head during a certain period of recovery. From about the fiftieth day after the operation, sensibility of the skin slowly began to return, the sensation of prick appearing first, soon being followed by temperature sensations, but a year elapsed before light touch could again be felt. The temperature sensations were at first very imperfect. To irritate the cold-spots, which reappeared in small number, rather low temperatures were needed and conversely relatively high temperatures for the warm-spots. But whenever the spots reacted the sensations were strong and widespread, their localization indefinite and often erroneous. Similar phenomena could be observed when painful stimuli were applied.

I quite agree with Dr. Head in attributing to these observations a considerable importance, but I can not see them in the same light as he sees them. He thinks that these imperfect sensations of cold, warmth and pain are brought about by a special system of nerves, which he calls "protopathic." These nerves regenerate, according to him, more quickly than the "epicritic" ones, their threshold value is high, their sensations strong and varying little in intensity, the localization very indefinite, etc.

I may be now allowed to recall what I have said regarding the perception of intensity and locality of a stimulus. I pointed out that in producing these perceptions certain qualities of the central nervous system, such as summation, irradiation and others, play an important rôle. If a cutaneous nerve is severed, the atrophy of its distal end, of its terminal organs and probably of the skin is not the sole effect, but there occur at the same time marked changes in the corresponding spinal ganglia and their posterior roots. In a very elaborate research George Koester, of Leipzig, has shown[8] that the cells of the ganglia first swell and then shrink and that they remain for months in an altered condition. Similar changes take place in the posterior roots. According to H. K. Anderson,[9] section of the sciatica nerve in young animals checks the development of the corresponding ganglia and posterior roots and of the cells in Clarke's column of the same side.

---

[7] Jour. of Physiol., 17, 211, 1895.

[8] Koester, Gg.: Zur Physiologie der Spinalganglien, Leipzig, 1904.

These observations furnish ample proof that at the time of incipient recovery the central connections of the cut nerve are not in normal condition, which makes it probable that their function also is altered. If we assume, for instance, that through the degeneration process the connections of neurons are loosened, it seems quite likely that after the operation stronger stimuli are needed to evoke sensations than under normal conditions, and that the irritation once established is little changeable as regards intensity and irradiation, which means that summation and localization are very imperfect. The assumption is the more probable since it is known that certain drugs act in a similar way. I believe, therefore, that the many interesting points brought forward by Dr. Head can be accounted for by reference to certain well-established physiologic and pharmacologic data. It seems, therefore, at least for the present, not necessary to introduce a hypothesis to which existing physiologic and psychologic data do not lend support.

I am quite aware that the explanation that I propose, like his, is more or less a hypothetical one. Still it has the advantage, as I believe, of being consistent with all the observations as yet known. Of course, every hypothesis is by itself transient and has to be changed as experience grows. That is the reason why I have wished to bring the matter before you, hoping that your experience will show me how far my conclusions are right and where I have missed the point. I am quite convinced that physiology alone, unaided by clinical observation, would be very slow in unraveling the mysterious functions of the nervous system.

DISCUSSION.

Dr. L. F. Barker, Baltimore, said that the Section was to be congratulated on having had the opportunity of hearing Professor von Frey give the results of his investigations. In 1895 it was his privilege to meet him for the first time and to have him demonstrate the method for distinguishing these four cutaneous senses, touch, pain, cold and warmth. It so happened that Dr. Barker had in his arm an area of elective anesthesia, due apparently to a cervical rib. In this area he felt pain sensations, but no cold, no warmth, and no touch. It interested him especially because he had an opportunity to study pure pain sensations unmixed with any other. At Professor von Frey's suggestion he studied this area and the adjacent skin for some six months under his direction. It was illuminating to see how his delicate methods permit the demonstration of the various sense points. The fact that he experienced pain sensations free from the other sensations in the area mentioned speaks strongly in favor of von Frey's view of independent pain nerves. The pain points are so close together in the normal skin, and are so difficult to stimulate without stimulating sensory points of other modalities, especially touch points, that many have found difficulty in convincing themselves of the accuracy of von Frey's observations. After becoming acquainted with pure pain sense it was easily possible for him to localize both touch points and pain points, and to distinguish them sharply from one another in normal skin. Of the many names connected with the physiology of cutaneous sense those of E. H. Weber, M. Blix, and Max von Frey are the most important.

Dr. S. J. Meltzer, New York City, said that there was no pain from heat; he could not say as to cold. His observations were made under local anesthesia. In one case in which magnesium sulphate was used, an operation was performed and the patient did not know he had suffered any pain. He had also had experience in the use of cocain. When this is used the sense of touch is present although the sense of pain may be absent.

Dr. S. I. Franz, Waverley, Mass., said he would like to ask Professor von Frey to explain from his point of view the results of the temperature tests made by Head and Sherren. Most of Head's subjects showed a loss of ability to appreciate medium temperatures, but a retention of sensation of the extremes, but Head also describes at least one case in which the extremes were not felt although the medium temperatures were properly appreciated. The first of these conditions may be explained as due to differences in threshold values, but when coupled with the second it suggests very strongly the probability of two different sensory mechanisms, one for moderate and one for the extreme temperatures—in addition, perhaps, to the "heat" and "cold" end organs and conducting nerves, which Professor von Frey has so ably demonstrated.

Prof. Max von Frey said he agreed entirely with Professor Barker in the view that different kinds of painful sensations exist. They could all realize that from cutting they suffered a different sensation from that resulting from strain of a joint. Pain may arise in nearly all of the tissues, while cold, warmth and touch are limited to the skin and mucous membranes. He called attention to the important work of Professor Tullenberg, who had shown that by high temperatures two heat sensations are produced, one a superficial and the other a deep one. Of course this had nothing to do with the assumption of Dr. Head, who assumes that the skin is supplied with two sets of nerves. Professor von Frey thought it important to investigate the different effects of poisons on the sensations; of cocain on the eye, for instance. The eye is very good for the carrying on of certain experiments. In using cocain he came to the conclusion that there was a difference in the lapse of time in the disappearance of the sensations of cold, warmth and pain. He was unable to make very extensive investigations. As to the remarks of Dr. Franz he thought he had shown that the differences which Dr. Head has observed are in the main due to differences in the temperature. He had to apply higher temperatures usually. Of course they would have to wait for a final paper by Dr. Head, but it seemed unnecessary to hold to the conclusion that there are two sets of nerves.

There was another experiment which was very startling in its results when done for the first time. It consists of putting a part of the finger or hand into mercury, which of course puts it under a high pressure, and this is not felt. Why is this possible? A very light touch will arouse the sensation of touch, while this will not. Professor von Frey found this to be due to a peculiarity of the touch nerves.

A SUMMARY OF THE THERAPEUTIC FIELD FOR THE PAST YEAR.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON PHARMACOLOGY AND THERAPEUTICS AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, JUNE 5-8, 1906.

THOMAS F. REILLY, M.D.
NEW YORK CITY.

Custom and the by-laws of the Association have ordained that your chairman shall outline the progress and advance in pharmacology and therapeutics during the year. To mention all of the advances in therapeutics in the past year would require a résumé of the progress made in the cure of disease in all the departments of medicine. The scope of this Section really embraces the whole art of curing disease and everything of a therapeutic nature is an open field for our discussion. I shall take up only those therapeutic measures that directly interest the general practitioner.

---

[9] Jour. of Physiol., 28, 499, 1902.

GENERAL REVIEW.

The number of useful remedies introduced during the past year has been very few. It is true that the usual horde of organics and synthetics made in Germany have come, though with somewhat abated vigor, but thus far few have been of any signal service. Doubtless a potent cause of the failure of the new agents to attract attention is due to the fact that experimenters, reputable and otherwise, are now more chary in extolling the imaginary advantages of a new agent than they were before the crusade of the past year.

Better appliances and more experience are responsible for the increasing use of ethyl chlorid as an introductory anesthesia, preparatory to administering ether. For this purpose it is rapidly replacing the more cumbrous nitrous acid and is apparently quite as safe. The great claims set forth as to the value of scopolamin-morphin anesthesia have, in a measure, fallen to the ground. At one time proposed as a general anesthetic and now used as a preparative sedative to ether anesthesia, it is but slightly superior to morphin and atropin. For many years morphin and atropin have been used for the purpose of quieting patients before anesthesia, and for this purpose scopolamin and morphin have scarcely any other advantages. The lack of excitation is more than counterbalanced by the after depression. Chemically, it is the same as atropin and the Phamacopeia regards it as an equivalent. Like the Greeks, we are always running after the old gods with the new names.

The treatment of syphilis by hypodermic injections of soluble salts of mercury has, during the past year, received a great impetus, by reason of the almost unanimous advocacy of this measure by the eminent syphilographers who have written on the subject. It is safe to say that the treatment of syphilis by inunctions will soon be a thing of the past. In Germany the intravenous use of some of the preparations of digitalis has achieved decided recognition; in this country nothing has been done in this line as yet.

No new organic silver salt of any consequence has been launched within the past year. Sober second thought is gradually convincing us how seldom it is possible to "shoot" the virulent germs and the number of successful results reported from the use of organic antiseptics has materially diminished.

A few new cocain substitutes are now before the profession awaiting trial. Personal observation leads me to believe that their seeming advantages are more than counterbalanced by other disadvantages.

Little has been heard during the year of the use of large doses of creosote and its derivatives in the treatment of pneumonia. Doubtless, it is still employed to a large extent for this purpose, but except for its effect on an accompanying bronchitis, the impression is gaining ground that it is not of any distinct service. From the Southwest, where, apparently, pneumonias are of a milder type than ours, comes a second champion who lauds massive doses of quinin and chlorid of iron as a specific in the treatment of this disease. It may be said to be still on trial, but certainly we in the East can not get the good results that its sponsor says he achieves in the Southwest.

In the large metropolitan hospitals there is a feeling of therapeutic nihilism as to the medicinal treatment of pneumonia, and in the vast majority of cases the treatment is expectant in character. It is safe to say that strychnin is the only agent used with any constancy. The mortality rate of from 20 to 40 per cent. certainly should be modified by judicious medication. The tendency to secure medicinal agents from animals rather than from the plant kingdom, has increased during the past year. The use of Moebius serum of thyroidectomized sheep has been established as a measure of practical value in the treatment of exophthalmic goiter. The serum of Beebe and Rogers, although differing very much from that of Moebius, promises well. The Italians have been very active in this line of work and many favorable observations have been made by them in the treatment of leukemia and anemia and other blood diseases with various sera.

There has been little added to our knowledge of the therapeutic value of the suprarenal glands; on the other hand from several sources a note of warning has come as to the use of subcutaneous injections of its various preparations. In not a few instances sloughing has followed its use. The continued use of the active principle of this gland in animals has unquestionably induced degeneration of the walls of the arteries. This is a point to be kept in mind when this agent is frequently employed in human beings.

The number of the diseases beneficially affected by the Roentgen ray therapy has not received any material increase; on the other hand the field of usefulness formerly claimed for it has been much restricted.

During the year the tendency to use large doses of antitoxin in diphtheria has become more manifest. A most important advance in this connection is the confirmation of the value of antitoxin in postdiphtheritic paralysis, even though the patient has already received antitoxin. The intravenous use of this agent does not seem to have found favor, although there are cases in which it is worthy of trial. The diphtheria antitoxin has been used for well nigh all disorders from acute articular rheumatism to cerebrospinal fever and competent observers have reported good results from its use in most of them. Whatever good effects that may have followed its use were due to an inherent immunity possessed by the horse before the diphtheria toxin was administered. Later observations do not warrant any hope from its use in cerebrospinal fever. As a prophylactic agent antitetanic serum may be regarded as a specific. In up-to-date hospitals its use in all cases of punctured wounds has become a routine practice. This is especially the case with blank cartridge wounds, and the number of cases of tetanus have markedly diminished. When the disease has begun the injections of the serum into the motor nerves, spinal canal and brain, offer the only hope. For a long time the use of the antistreptococcus has been regarded in the light of an experiment. There is reason to believe that the use of polyvalent sera has been followed by marked results. The field of usefulness is much like that of antitetanic serum, in that it acts better as a prophylactic in suspicious cases than as a curative agent after the establishment of the serum disease.

No confirmation of Behring's antitubercle sera has been reported. Hoffa, of Berlin, in the *Revue de Thérapeutique* speaks very encouragingly of the use of Marmorek's antitubercular serum in cases of bone and joint tuberculosis. He reports a series of thirty cases wherein the use *per rectum* of large doses of this serum has been followed by unmistakably good results.

On many occasions the word has gone forth from this Section that a more systematic study of our native plants would enormously enrich our medical armamentarium. If one-half of the energy that is daily put forth to discover some new coal tar product were employed to test our native plants and to extract their active principles, I am sure far more permanent results would be obtained. Why should there not be other plants growing about us, that will do for other organs what digitalis does for the heart and what quinin does for malaria? Coal tar derivatives have never cured disease. In every case their effects are but temporary. The reason of this present skepticism of the profession toward our native materia medica, is doubtless due, in a measure, to the senseless claims made by earlier inexperienced and too often uneducated physicians and laymen, claims which were found to be preposterous. If it were found that the agent did not benefit the disease as it was claimed to do, it rapidly fell into oblivion. This is not the method of the ultrascientific staff pushing a new coal tar derivative. They keep on trying it for everything and finally it may become a well recognized agent, useful for an entirely different affection from that which its originators intended.

THE PHARMACOPEIA.

The past year has witnessed the launching of a number of pharmacopeias. Those of European countries, as well as our own, have in the main, adopted the principles laid down in 1902 by the Brussels Conference. This has resulted in a uniform standard of strength and character for most medicinal agents throughout the civilized world. In this country hitherto, the appearance of a new edition of the Pharmacopeia has excited little notice on the part of the profession. A few college professors felt obliged to keep abreast of its teachings, but the general body of the profession had come to view it as being essentially a druggist's book. This year the condition is vastly different. The few changes that have been made in the strength of some of the well-known drugs have attracted the attention of the rank and file of the profession and there is a constant demand for instruction on the rules, changes and suggestions contained in the new work. Probably the most far-reaching result of the new edition is the establishment of the so-called purity rubric, whereby all articles which bear such a standard are restricted in their absolute purity without necessarily criticising minutely as to what the fraction of a per cent. claims to be. Such rubric gives all of the courts of our country a standard which they have long plead for to base their findings on and lends more protection to the public than a casual observer can realize. It is now believed that more frequent revisions of the pharmacopeia are necessary and it seems to me that the time has come when the American Medical Association should take a hand in this work. With our Council on Pharmacy and Chemistry, with a laboratory force, and with a journal as a mouthpiece of the entire profession, we are better equipped for the work of revision than any body which could possibly be selected as the Pharmacopeial Conventions have been in the past. Far from having any intention to impugn the work of the committee on revision, than which a better never existed, it is my belief that if the medical staff of the committee were selected by this Association and the pharmaceutical and chemical staffs by the national chemical and pharmaceutical associations, the revision would more nearly be an expression of current medical usage. As it is many agents have been retained that are not in general use, while others much used have been omitted. A national organization is eminently fitted to find out such facts and to give the book a national character.

THE CAMPAIGN AGAINST NOSTRUMS.

Of all advances in therapeutics during the year, none is more noteworthy, none will be more lasting to the whole art of therapeutics, than the war against nostrums and semi-secret preparations. It is safe to say that the campaign which has been waged by The Journal of this Association for the past two years and by various lay periodicals during the past year, has made thousands of physicians turn to the writing of pharmacopeial prescriptions rather than prescribing some confessedly secret prescription or proprietary, which often amounts to the same thing. This is distinctly a therapeutic advance and as it is potential for further growth it is all the more commendable. Many of the waves of moral upheaval which have characterized the past year in the different spheres, will doubtless recede as they have done before, but with this matter there can be no backsliding. The establishing of the Council on Pharmacy and Chemistry marks a pillar which as a permanent institution will always hold a beacon light to show the difference between the true and the false. Next to The Journal, it is the most valuable asset of the organization, and it is hoped that its work will be brought to the door of every practitioner of this country free of cost, whether he be a member of the organization or not.

WHY PROPRIETARIES ARE POPULAR.

It is not my intention to discuss the ethical and nonethical proprietaries; others have done that more exhaustively than we have time to do here. It seems to me that the chief reason for the use of the proprietaries is not that they contain any wonderful medicinal agent or combination of agents, but that they do present disagreeable tasting medicines of more or less value in a palatable form. We may say that it is a small matter, that the relief of distress and the cure of disease are our chief objects, but the present generation is a generation of sensitive stomachs and sensitive nervous systems, and the small things such as a disagreeable potion are to them a major affair and in many instances cause more discomfort than the disease, hence the vogue of homeopathy among the well-to-do. For instance, scarcely any one really believes that the modern organic iron preparations are intrinsically better than the old pharmacopeial inorganic salts, but it is the general belief founded on experience that, as furnished by the manufacturers, they do not disturb the stomach and are not repellent to the taste. I might mention many other similar instances. This brings the matter squarely up to the medical schools as far as the next classes of graduates are concerned. For those in practice it is no new advice to tell them to study pleasant combinations. By asking the advice of competent druggists many improvements in the routine prescriptions can be suggested. This must be a matter of individual education.

In some instances it seems that it might be a good plan to fill in the active ingredients of the prescription, quantity and dosage, and then to state that the druggist can use his own skill in making it palatable by the addition of flavors, etc. Such additions should then be incorporated in the prescription. In this way the druggist will take some pride in filling prescriptions and the more skillful he becomes the more patronage he will receive and thus he will be compensated.

THE DRUGGIST AND THE PHYSICIAN.

Another plan for educating the profession individually is that pursued by the druggists' association in several parts of the country. Circulars explaining the palatable prescriptions of the *Pharmacopeia* and of the National Formulary are sent monthly to all physicians in the neighborhood. The profession has generally been skeptical as to the ability of the retail druggist to make elegant and palatable preparations, and this notion has been fostered by the various proprietary agents. This was all too true of the slovenly druggist of a decade ago. To overcome this prejudice some of these up-to-date druggist associations before mentioned have followed the example of the detail men of the proprietary firms and are sending neighboring physicians small samples of the pharmacopeial articles as dispensed by them. These are in every instance the equal in quality, taste and appearance of any similar proprietary. Many physicians may not relish such instruction offered by the pharmacist. but it is a thousand per cent. superior to that dispensed by the average detail man. In a number of cities joint meetings of the local druggists and physicians have taken place and as a result a better feeling has been engendered.

This Section forms a link, as it were, between the druggist and the physician, and we hope in the future that closer relations may be maintained with the national pharmaceutical society. Plato's dictum that great questions are only to be decided by compromise holds good for this matter of the proprietaries. Some features of the proprietary trade must remain; others must go. Out of the present clash of interests and theories certain well-defined principles will be evolved that will form a basis for a newer science of therapeutics.

Original Articles

HEALTH INSPECTION AS APPLIED TO THE INDIVIDUAL.*

LOUIS FAUGERES BISHOP, A.M., M.D.
Physician to the Lincoln Hospital.
NEW YORK.

The care of the health, when it comes to a discussion of its restoration when it has been lost, is a very old topic. Health inspection, as a wholesale proposition, as applied to communities, states and countries marks in its development perhaps the greatest advance in the application of science to human welfare. As applied to the individual, it still lags far behind what it ought to be.

Hundreds of lives are lost every year, and thousands of days of disability incurred because it is not the custom for the health of the individual to be the subject of inspection in such a manner as to detect and remedy disease in its beginning.

The life insurance examination which, of course, is only applied to relatively few individuals, reveals a surprisingly large amount of unsuspected disease.

Every individual should be thoroughly inspected from time to time by a physician applying the resources of a complete physical examination, with chemical and microscopic observation of all obtainable secretions, in order to ascertain the standard of health of the individual.

No one would think of running a complicated machine without an annual inspection and overhauling of those slight defects which, if neglected, lead to a serious breakdown.

Each generation as it advances through decades considers itself an exception to the one that preceded. and no one accepts the penalty of advancing age until it is thrust on him. The laboratory would inevitably reveal the necessity for attention to diet years before incurable physical penalties had been uncured.

Such an examination to be of value must be very technical in its nature.

Patients naturally seek the physician for disordered conditions that are sufficiently obvious to attract their attention.

The observations necessary to determine the standard of health of the individual in the absence of evident disease are so technical, consume so much time, and require so much manual dexterity, that the examinations themselves must usually be made by young physicians whose attention can be devoted chiefly to these things. But the young physician is unable to judge of the relative importance of the very technical details which he is specially capable of discovering. For this reason, the general practitioner, or as he has come to be called, in these days, the private practitioner, should have his practice so organized as to obtain the assistance of younger men who have fresh skill and enthusiasm with regard to the technicalities of physiologic observation. Comparatively few men have reached the point of such an organization for themselves alone. Some of us have brought this about by the establishment of a coöperative clinical laboratory, where the younger men who are fresh in all the technicalities of chemical and microscopic research do the work of older men, who are in actual practice.

Such a laboratory must be under the direction, more particularly of one man or a committee, but so long as it is purely coöperative in spirit, in that everything is done for the interest of those who come into the arrangement, and so long as the laboratory remains a place where actual practitioners meet to discuss technicalities with the younger men, and the significance of things with their fellows. it will tend to make clinical pathology a practical matter to actual practitioners. It is by means of such an organization that we may arrange our clientéle so that the continuous observation of each individual, while in apparent health may lead to the early detection of disease. The number of people who are willing to submit to this system is, unfortunately, comparatively small, but when its advantages are once clearly understood the number ought to be larger.

The individual must be trained to employ his physician to watch his physiologic processes in the same way as the public has come to expect the medical profession to watch over the health of the community.

Every person should possess a record of his physiologic standards and peculiarities for reference in case of suspected disease.

The united profession can work for the wholesale care of the people, while it is very hard for an individual physician to approach an individual citizen with a proposition for continuous care. This must be brought about by gradual education.

DISCUSSION.

Dr. S. A. Knopf, New York, said that Dr. Bishop had outlined the ideal future life of the average American citizen. He will have his own private family physician; if he can afford to pay for it, all right; if not, the municipality will pay for it. Dr. Knopf commended Dr. Bishop's ideas about the necessity of periodic examination of the average individual, particularly those predisposed to disease. Dr. Knopf said that in the tuberculosis crusade he has emphasized this point particularly in families predisposed to tuberculosis. If we wish to combat tuberculosis as a family disease, in the schools.

---

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June. 1906

and in the educational institutions, it is absolutely necessary, he declared, that we should have an entrance examination not only intellectual, but physical, that children should be reexamined at least every six months, or yearly. He said that these suggestions are a little utopian, nevertheless they are ideals; without enthusiasm we can not attain anything.

Dr. M. Friedrich, Cleveland, said that one can not even get the examination of the school teacher, a most necessary thing. He can not force an examination, even, of a man who drives a milk wagon, which is absolutely essential. No man who has tuberculosis ought to handle milk. He can not get the examination of the bakers. The man who handles bread ought to be examined. It will take years and years to establish examination of individuals; for as soon as one attempts to examine an individual he will say: "You are encroaching on my personal liberties," and that is just where the shoe pinches.

Dr. Seneca Egbert, Philadelphia, said that while he agrees with Dr. Knopf that Dr. Bishop's proposition is rather utopian at present, he would like to suggest that there are places in this country where it is, in a measure, put in force; namely, in many of our colleges. While the physiologic examinations there are not complete and are largely anthropometrical, they do good by giving the authorities in the colleges a knowledge of each individual entering them whether as freshman or in a later year, and they give the students who enter these colleges a better knowledge of themselves and stimulate their fear, their ambition or whatever it may be, so that they get to work in the gymnasium and improve their condition, as is manifest within the first six months after entering and being examined. In the four years the improvement is remarkable and Dr. Egbert thinks one could say that the average condition of the men who go out from the colleges where such preliminary examination and anthropometrical work is carried on, is far better at the end of the four-year course than that of the men who go out from colleges where such examinations are not made. It also seems to him that here we have the kernel of the right beginning of the movement—that the men and the women who go out from such colleges are the very people who should carry this idea out among the laity and who may be powerful coadjutors of the physician who wishes to help this along. It is true that the idea is utopian at the present time and that it will take a long time before we have everybody examined; but when we appreciate that we have to-day three or four thousand people in our colleges who might be good, stanch advocates of such ideas in the future, and when we get down to the fact that sooner or later we must teach in our normal schools these very things and there develop these very ideas, we have the way made clear for a good beginning. We then will begin to be able to have the school teachers examined, after them the pupils, and so in time, he said, a comparatively large portion of the population will come practically within the scope of Dr. Bishop's suggestions.

Dr. Louis Faugeres Bishop, New York, declared that he is a great advocate of keeping young men who are beginning the practice of medicine at all kinds of pathologic and physiologic examinations, and said that these young men are glad to do the work in chemical pathology arising in the practice of old practitioners. He said that only by coöperation with such workers would it be possible to carry out his idea of health inspection.

Function of Pancreas in Metabolism.—Ugo Lombroso has recently published a report of considerable experimental work on this subject. He found that the disturbances caused in dogs by ablation of the pancreas were not modified by introduction of pancreatic juice into the duodenum under conditions closely approximating the normal. This demonstrates, he thinks, that the disturbances can not be the result merely of the lack of the pancreatic juice, but that they must be due to a missing internal secretion of the pancreas. This assumption is favored by the singular persistence of the islands of Langerhans after ligature of the pancreatic duct in rabbits. This persistence suggests that these islands participate in some internal secretion independent of the secretion of pancreatic juice. Lombroso's work is reviewed in the *Gazzetta degli Ospedali*, No. 68, 1906.

SOME TRUTHS ABOUT SLEEP.*

NORMAN BRIDGE, M.D.
LOS ANGELES, CAL.

In the popular mind there must be some mistakes about sleep, so variant and dissimilar are the views as to the need of sleep, the effects of it, and of the lack of it.

One man is sure that for health and strength he needs only four or five hours of sleep out of each day of twenty-four hours, and he quotes numerous people above childhood who have like views and experiences. Another must have eight or nine hours and cannot do with less, and, as all men tend to measure others by the yardstick that fits themselves, he is sure to believe that no one should have less than one-third of his existence spent in sleep.

The medical profession freely teaches this latter view and insists that children especially must have an abundance of sleep or be in peril of nervous and mental bankruptcy. We are told that infants should sleep a large part of the time for safety from calamity to their brains, yet there are instances of infants and small children who have for many months together slept less than four hours in the twenty-four and come out of the experience with vigorous minds and bodies.

INSOMNIA: A WRONG THEORY.

Great numbers of people in our modern life of high nervous tension are victims of insomnia, more now than ever before, and the number is apparently increasing rather rapidly in certain communities. Drugs to produce sleep were never in such demand, were never used so freely, both as a temporary expedient and as a daily habit, as now; and they are sold in vast quantities all over the nervous world, and used according to the whim of the sleepless, more often without than with the advice of physicians. Insomnia is therefore a favorite harvest field of the exploiter of "patent" nostrums, for he well knows that, driven to desperation by sleeplessness, its victim is ready to do anything that promises relief; and if sleep comes as an effect of a drug he is ready to forgive other and perhaps resulting ills, that may in the end be worse than the insomnia.

Possibly some of the sleeping potions may do good by helping to sleep without inflicting any incidental harm to the system, but the evidence is strong and accumulating that most, if not all, of the soporific drugs do harm in some way, especially the coal-tar products and all those that work their effects by obtunding the sensibilities of the nervous system. While their use may be justified by an occasional exigency, they are in the main mischievous because, if for no other reason, they undertake a function and do a thing for the body that good hygiene and a better course of living, as a rule, should make unnecessary.

The testimony of patients with this affliction certainly seems, on the face of it, to confirm their theory of the seriousness of insomnia, for they find that a night without sleep, even if they are in bed and bodily resting, unfits them for the duties of the coming day, and that after a good night, they are fresh and strong. And these data are correct; after a wakeful night these patients are unnerved for the day, and after a night of good sleep they are fit and cheerful. Whether their theory is correct that lack of sleep alone does the mischief is another matter, and there is reason to doubt this conclusion and to suspect, if not to know, that the insomnia is only one of several factors in the problem; one of several co-results of a common and another cause and not itself the sole cause of all the harm.

---

* Read before the Association of American Physicians, May 16, 1906.

There can be no question that the victims believe implicitly in the current theory. They easily come to dread a sleepless night; they look forward to such a possibility with nervous apprehension, if not horror, which makes them less likely to sleep; in the throes of wakefulness when they have gone to bed for the purpose of sleeping they become so annoyed as to make sleep hard or impossible to court, and so they lie awake tossing in restlessness and chagrin till morning; and afterwards they look back on the experience with a sense of gloom.

INSOMNIPHOBIA.

It is not unnatural that they should attribute all their bad symptoms to the lack of sleep, for that is the easiest generalization; but it is only half true, if true at all. It is vastly important in this study to keep the horse in front of the cart, for the tendency is great to reverse them. The true story is that the horrors of insomnia are slightly due to want of sleep—very much due to insomniphobia, with which, in some degree, nearly every such patient permits himself unnecessarily and foolishly to become afflicted. His experience is analogous to that of the patient with phthisis who has night sweats. This latter believes, till he is taught otherwise and better, that his bad day is due to the night-sweat preceding it. This is a natural but a most unscientific inference for the patient to make. Really, the bad day and the sweat are co-results of another and a different influence; they are not cause and effect. When the patient learns this truth and that the sweat is not harmful in itself, but a possible benefit by the expulsion of poison, he discovers that it is only a trifling inconvenience, not a calamity, and he bears it with equanimity, if not with pleasure.

The victim of insomnia is equally wrong and equally unfortunate in his reasoning about his case. He honestly believes that loss of the sleep which he thinks his due, is fraught with the certainty of great injury; he laments his infirmity and fears he may become insane, and becomes nearly so by his worry, when if he could and would stop his fretting, he would find that he was hardly hurt at all. The very attitude of his mind when he goes to bed tends to keep him awake, for he is in a state of mental expectancy of insomnia, and the longer slumber is delayed the more demoralized he becomes, the more exalted is his irritation, and the less likely is he to fall asleep. What is worse, he is very unhappy about it and this mood tends still more strongly against slumber.

If he can go to bed and sincerely resolve that he does not wish to sleep, but would rather keep awake all night and perhaps read a book or otherwise try to drive off slumber; if he can bring his mind to this mood, which is one of pleasure at being awake—then he will fall asleep before he knows it and probably so remain the night through. The chief thing is the mood of pleasure, or lacking that, stoical indifference as to whether sleep comes or not; it makes the terror impossible and brings enough sleep in nearly every case—not eight hours it may be, but enough.

REST FOR THE BODY.

There is another truth about this subject that is even more fundamental, and one that is substantially never mentioned by students of it. This is that our theory is wrong that we go to bed and stay there eight or ten hours a day for the chief purpose of sleeping. Sleep, go to sleep, get sleep, sleep is the great restorer, blessed sleep—these are the cries that always ring in our ears, and that have probably in some form rung in the ears of all the recent generations as indicating the drift of thought about sleep. But it is a narrow and a one-sided view. Of course sleep rests the tired brain and lets its cells recuperate from the strain of labor that lowers them, but what of the weal of the tired body whose tissues have been lowered by the work of the day? This consideration has been almost wholly neglected in our scheme of reasoning and the poor body has had to get what benefit it might as an incident of the sleep. On the contrary, we should go to bed to rest the tired body and let sleep come as an incident; rest of the body should be the chief aim; go to bed for that purpose and the sleep will mostly take care of itself. Man can, by his volition, send his body to bed as readily as he can chop his wood, and so his body rests; but sleep comes as a sequence of the conditions of his body, i. e., fatigue, horizontal posture, quietness, silence and darkness to shut out impressions and to incline the brain against thinking; it does not come and never can come by an act of the will, as one rises and walks. The brain puts itself to sleep, so to say, involuntarily as the conditions entice.

The body should probably, with an active life, rest about one-third of the time, and it is not necessary that the brain should be unconscious in sleep all this while. Perhaps no one sleeps too much, but we have had surely an extreme estimate of the amount of sleep which it is indispensable that a rested body should have. This is a most practical truth; and every insomniac who gets himself down to or up to this mental basis begins at once to benefit from it, and he finds that lying awake an hour or two of a night, or before rising in the morning, is not only not harmful, but is not specially unpleasant. Then he is surprised to find his terror gone: he ceases to be an insomniphobiac and becomes a happy philosopher.

CULTIVATION OF A PROPER MENTAL ATTITUDE.

But this mental basis is one of the hardest things in all the experiences of life for the distraught poor sleepers to reach. It is hard for them to change their philosophy of sleep and their habits about it. They have unconsciously and unwittingly come to regard the act of lying in bed awake in the night as a punishment, if not a sin. They are chagrined if they do not drop off to sleep promptly on going to bed; and if they waken before daylight they fret till rising time, or they get up before their rest is over because they are awake. This fuming tendency of the mind is a most interesting study. It is quite as likely to reveal itself about a trifle as about the momentous things of life. A man will be extremely annoyed and impatient because you keep him taking a pill three times a day for weeks, although the pill is sugar-coated, is swallowed easily and produces not a symptom of which the patient is conscious. If it were a sugar-coated bread pill and he did not know this, he would grieve about it as freely. And we are all witnesses of countless lamentations of people because of trifling discharges from their throats and noses of harmless mucus each day. We know and they know that no pain or discomfort comes of it, yet they are in daily terror of the awful consequences they suppose to attend this trifling thing labeled catarrh.

It is hard to unlearn the lessons of a lifetime which are reinforced by beliefs that are hereditary from a thousand generations of usage, and to see as agreeable the things that have always been considered disagreeable. The sleep problem illustrates this to a high degree. One of the hardest sides of this problem is the contention that much less than the classical eight hours of daily sleep will do. But there are many facts to prove this thesis. People who lie abed long hours reading, sleep correspondingly little, and they live as long and keep as well as the average. It is notorious that many eminent men of history have slept little, and I think hardly one who can be called an intellectual giant has been accustomed to a great amount of sleep.

A CHILD'S EXPERIENCE.

Nor is it necessary that children, even infants, should have as much sleep as we have supposed. Many years ago my eyes were opened by an experience with a wakeful baby. He slept only about three or four hours a day on an average for a year, as shown by the most accurate of records, this wakefulness being due apparently to some nervous predisposition. Quieting drugs were tried, but it was soon found that dangerously large doses would be required materially to increase his sleep; and so, fearing the drugs more than the insomnia, his treatment was confined to good nursing and good nutrition. *I fully expected that the child's brain would be permanently* harmed by this experience, but nothing of the sort happened. At the end of a year and a half he was sleeping better, and by the end of his second year he was getting as much sleep as the average child of his age, and he was well and vigorous and had a good mind. Then a strange thing happened. He began to sleep more than other children, and by his fifth or sixth year, when he began to go to school, he was sleeping about fourteen hours. By his tenth year he seemed to have paid back to Nature what had been lost and was sleeping like other children of his age. He was perfectly well in mind and body, active and mischievous, and was well abreast of his schoolmates in his studies. One such case is enough to demolish the theory that a child must, that all children must, sleep a great deal or be ruined.

It is a common experience for a man to put off his bedtime till a late hour because he thinks he can not sleep till then; or to walk or work so as to tire his body profoundly before going to bed, in order that he shall be sure to sleep; or to get up at an absurdly early hour in the morning because he has awakened and can not sleep any longer. In all these ways he is wrong, for in them all he follows the wrong theory that we should go to bed chiefly for sleep. We are foolishly terrified by lying in bed awake, in the dark and with nothing to do. We are as bad as children afraid of ghosts. It is an unreasonable and an unreasoning fear, and one that any sensible person should have no difficulty in putting aside if he will only stop to think about it.

The body must be well rested every day, and in the horizontal posture. The erect position that is maintained through nearly all the waking hours makes this indispensable. We are physically handicapped as compared with the four-footed beasts; we need more rest of body than they, and rest horizontal, and if we get enough rest of body we usually get enough sleep if we only let ourselves sleep and do not worry to prevent it. But we should, as far as possible, seek those physical conditions that physiologically encourage sleep while we are resting. That rest of body is more necessary than much sleep, and that insomnia is clearly provoked by an easily prevented mental mood, are no warrant for us to neglect any of the obvious aids to easy slumber.

CONQUERING THE NOISE NUISANCE.

Light keeps some people awake; usually more than need be because they worry about it and magnify it as an impediment. Most people can have their bed hours in the dark; they can either go to bed early enough to have eight hours dark, or they can darken their rooms. Many are kept awake by noises great and small; often needlessly kept awake by trifling sounds that would be wholly negligible save for their propensity to be nagged by them. The irritation grows by indulgence; every time they hear the sounds and regard them as annoying, the horror grows. If the noises are produced by people or by animals, and are therefore preventable, the offensiveness is usually greater; the sounds of wind and waves and rain, or even gentle thunder are less sleep-killing than the coughing or snoring of an innocent neighbor or the distant barking of a dog.

Most people can overcome very much of any morbid sensitiveness to sound if they understand these truths and will try. But few will try hard enough and be wise enough for this consummation; and so some remedy for the noises of creation is proper for such people, if a remedy can be found that is harmless. The measure, whatever it is, must be mostly subjective, the noises themselves can be controlled but little; they must be kept out; the sound waves must be prevented from entering the ears. Cotton stuffed into the ears does a little good, but some waves pass through it unless it is packed so firmly into the meati as to cause discomfort, which, of course, renders the scheme nugatory. A cloth or other dressing tied over the ears may keep out many noises, but here again the apparatus, in order to be efficient, must press so tightly as to frustrate its purpose by the discomfort it causes. The thing needed is an air-tight, non-vibrating stopper for the ears; one that will not itself make a disagreeable sensation by pressure or otherwise; one that is easily applied by the patient himself, and one that is harmless. Common paraffin seems to fill these conditions; it is easily used, is harmless and wonderfully efficient. A small mass of the substance is warmed in the mouth, chewed perhaps to soften it the more rapidly, and is then pressed firmly but gently into the ear. It adjusts itself instantly to the external meatus, hardens as it cools and remains an almost complete bar to the passage of sound waves, without producing a disagreeable sensation, indeed, with so little sensation of any sort that its presence is soon forgotten. It is applied at bed time and removed by the finger in the morning; or it may be worn during the day if it comforts the patient, but not all the day for fear of interfering with the normal drying of the external ear. It may be used in this way for a long time with no harm of any sort and with the great advantage that it makes the patient nearly, or quite, independent of the unavoidable noises of his environment. This device may render it unnecessary to go to the country to sleep in order to escape from the city noises; it may make it less necessary to keep the children still to avoid waking their elders, and it may help the sensitive children to finish their naps in spite of the inevitable noises of the day.

OTHER TROUBLES.

Many people are poor sleepers for want of sufficient clothing in bed; cold feet are especially apt to keep them awake. A good bed is needful, for it rests the body most and so helps towards sleep. The remedies for these defects are obvious, but often beyond reach. Overfeeding often causes insomnia, if it does not make the drowsiness of indigestion, causing heavy sleep in the early evening and miserable wakefulness afterward; and overstimulation, especially with tea and coffee, is often fatal to good sleep. These troubles are always correctable. A loaded large intestine often keeps a sensitive person awake for half the night, when a prompt evacuation by an enema, a glycerin suppository or a quick-acting saline, relieves the insomnia for the time completely Foul air to breathe is a frequent cause of wakefulness; for this the remedy is fresh air in great abundance; and people do not take cold in well ventilated bedrooms.

When people are up and about they rarely become sleepy because their brains are tired. They often thus are sleepy, but this is mainly due to fatigue of the body or to some disarrangement of the digestive organs. Sleep comes normally with a normal and unabused body that has been fatigued a little and then been put to rest, and it is helped by cessation of active thinking, by darkness, by stillness, by mental tranquillity and a happy spirit. These things are first to be secured if possible; then the sleep comes as a natural consequence and, with hardly an exception, in sufficient amount. The sleep is secondary, not primary; these other things are primary and of great importance.

We must not count the hours of our slumber for fear it is not enough; that would break the charm of the influence and spoil the game. We may keep a record if we like, and it may be useful for our amusement and to help to fix the exact amount of sleep (which now no man knows) that, in our social zone, is physiologic for the man, woman and child of the present century with their varying orders of enlightenment and manifold grades of work and play. But this question can never be settled by the one poor slave of insomnia or by a thousand of them, and the question can wait. It profits each such unfortunate to neglect the race interests for his own, and to put his mind, in the calmest sincerity, to the task of saving himself from his thraldom—and the task need not be hard nor its benefits uncertain.

THE TREATMENT OF THYROIDISM BY A SPECIFIC SERUM.[*]

JOHN ROGERS, M.D.
Surgeon Gouverneur Hospital, Assistant Surgeon St. Francis' Hospital.
NEW YORK.

As the atypical forms of exophthalmic goiter are common and often overlooked on account of the nomenclature, it would be more accurate and at the same time less confusing to designate the condition as hyperthyroidism or simply thyroidism. The cases can be classified somewhat in the order of frequency of their occurrence in the following groups:

1. Simple chronic exophthalmic goiter or thyroidism of moderate severity with all the symptoms which gave origin to the name.

2. Atypical thyroidism which includes many of the early cases and those with more or less irregular symptoms, such as absence of goiter or of exophthalmos or of both; or those which complain chiefly of gastrointestinal disturbance with pain.

3. The chronic toxic cases of thyroidism or severe forms of the disease with slight fever, which may be the terminal stage of the common atypical form, or show little or no exophthalmos or goiter from the outset.

4. The acute toxic thyroidism presenting a clinical picture which Dr. W. G. Thompson has aptly compared to that of malignant endocarditis. These patients show little or no exophthalmos and a small soft thyroid and suffer from fever which may be quite high.

5. The psychopathic or neuropathic cases of thyroidism, which are a comparatively rare but, from a therapeutic standpoint at least, an important group. They give symptoms which sooner or later indicate organic change in the central nervous system and are only relievable in the early stages of the disease.

SYMPTOMS OF THE DIFFERENT TYPES OF THYROIDISM.

The most characteristic symptoms are those dependent on the vasomotor and nervous disturbances. The cutaneous blushing and feeling of heat, the "nervousness," tremor and often insomnia and the tachycardia with a soft, weak pulse are quite constant in all cases.

The exophthalmos and goiter may each vary within such wide limits that they should be considered as much confirmatory as positive signs. The subjective feelings of general discomfort, weakness, throbbing of the heart, dyspnea and frequently abnormal thirst must be borne in mind, as they are generally the first to disappear in any given case if the serum therapy is to succeed, while the other symptoms usually improve very slowly.

The *atypical group* includes some of the incipient cases which show no goiter nor exophthalmos, but can be recognized by the vasomotor and nervous disturbances; and the cases with goiter of long standing which not infrequently develop marked thyroidism quite suddenly and have no exophthalmos; and, finally, the cases usually with no exophthalmos but some goiter, which at irregular intervals suffer from pain referred to the abdomen or thorax and evidently due to excessive fermentation of food. At these periods the pulse becomes very rapid, but otherwise the whole clinical picture is one of acute indigestion, and unless the goiter were noted in conjunction with the tachycardia the probable cause of the difficulty is easily overlooked.

The *chronic toxic* type of this disease presents no particular difficulties in diagnosis, except that I have seen it occur and give every evidence of ultimately proving fatal with a decreasing exophthalmos, goiter and pulse rate, the greatest danger seeming to lie in the exhausted and degenerated heart muscles. It is in these chronic cases that the bad secondary lesions of blood stasis and general anasarca dependent on the impaired cardiac action become so prominent, and unless there is a considerable goiter or exophthalmos the true cause of the trouble may not be detected.

The necessity of the recognition of *acute toxic thyroidism needs* considerable emphasis. Though the condition is quite uncommon, I believe that it is by no means so rare as is generally supposed, nor so difficult to recognize after attention is called to it. Judging from the few cases I have seen and known about, this particular condition must have a very high mortality, and yet I believe that of all the different types of exophthalmic goiter this is the most amenable to the serum treatment. The history of such a case usually covers a few weeks of the common vasomotor and nervous symptoms which more or less rapidly become worse and are accompanied by fever until the clinical picture, as Dr. W. G.

---

[*] Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Thompson has described it, is almost exactly that of malignant endocarditis. There are the flushed and sunken cheeks, dry tongue, rapid labored breathing, tumultous heart action, the nausea, vomiting and diarrhea of any toxic state and often thromboses or extravasations of blood in the neighborhood of the peripheral vessels. There may also be enlargement of the liver with pain and evidence of perihepatitis. The terminal stages are accompanied by delirium and finally coma, and as the urine may contain albumin or sugar the possible errors in diagnosis are evident. There is usually no exophthalmos, at least there was none in the few cases I have seen, and about the only characteristic feature among all the symptoms is the thyroid enlargement. Without some increase in size of this organ open to detection by sight or touch, I do not believe the correct diagnosis can be made except by the most careful exclusion of all other possible conditions and by the trial of the antithyroid serum. Fortunately the thyroid, though small, is generally at least palpable and this is a valuable guide.

The *psychopathic or neuropathic* forms of thyroidism constitute a small but important group of cases, and when there is taken into consideration the evident poisoning of the nervous system, which is so prominent a feature of this disorder, the only wonder is that pronounced disease of the brain or spinal cord or peripheral nerves does not more often supervene on the usual insomnia and general state of mental and nervous excitation. In looking over the histories and recalling the individuals it is quite possible to trace the progress of the psychic changes from the mild forms of alternating exaltation and depression through a melancholic stage to pronounced delusions with homicidal tendencies. Of two bad cases of this description which I have seen, one after recovery and the other in the intervals of the malady, could recall to memory all their disordered imaginings and acts and were more or less aware of their disordered character during the period in which they suffered from mental derangement, but they were controlled by overpowering impulses. In the beginning these patients ought to be curable; but after organic changes in the nervous system have occurred any great improvement is probably impossible.

A SPECIFIC SERUM.

The preliminary report on the treatment of exophthalmic goiter by a specic serum published in February, 1906,[1] contained statements which must now be somewhat modified. The serum is made by separating the nucleoproteids and thyroglobulin from the human thyroid gland and injecting these bodies into the peritoneal cavities of rabbits, dogs or sheep. The inoculations are continued at intervals of from five to six days for about six weeks and the animals are then bled from the carotid. The serum thus obtained presumably contains an antibody or cytotoxin which is specific in its action on the thyroidal epithelium and an antibody or antitoxin for the thyroglobulin which is believed to be the active and, in diseased states, the toxic product of the gland. I formerly attempted to draw some clinical distinction between the antitoxic and cytotoxic elements in the serum, but more extensive experience has shown this to be probably erroneous. Hence, as the antitoxin has at the best a more or less theoretic existence, while the cytotoxin can be demonstrated in the test tube and all the clinical phenomena can be explained by the action of the cytotoxin which is certainly present, I shall mention only the cytotoxin.

Nevertheless, a serum made by excluding all the globulin and using only the nucleoproteids from a pathologic thyroid (exophthalmic) seems at least dangerous (Case 38), while neither the normal nor the pathologic serum made in the usual way by combining the nucleoproteids and thyroglobulin in the injections has produced, at the worst, anything more than severe symptoms.

Early in our experience the need of some means of standardization of the different sera became apparent, and Dr. Beebe devised an agglutinin reaction by which an estimate could be made in any given sample of serum of its cytotoxin activity. The complicated details of this test will be found in his article; it is enough to state here that minute fragments of human thyroid gland suspended in salt solution can be agglutinated by a specific antithyroid serum in a manner quite similar to the agglutination of typhoid bacilli in the Widal reaction. The more pronounced and rapid is this antithyroid agglutination the more effect will the serum exhibit clinically, although, unfortunately, this is not a very reliable therapeutic guide. Nevertheless, it is of considerable assistance in judging of the presence or entire absence of any active constituent in the serum yielded by any particular animal. In other words, some animals were found to yield a serum which gave no agglutinin test and in such instances the effect on the patient was entirely negative. At the same time it was demonstrated that only a large gray buck of the Belgian hare species of rabbit could be at all relied on; white rabbits have been found to be of practically no use. The dog, which in respect to the quantity of serum obtainable would be a very desirable animal, produced a serum showing in the test tube slight activity; but the sheep was considerably better, although a great quantity of thyroids were required for the inoculations; and the material used for immunizing purposes is not inexhaustible even if its character which, I believe, is a very important factor in the results, is not considered. For the sake of brevity in description, I shall call the serum obtained by inoculating rabbits with the combined nucleoproteids and thyroglobulin of the pathologic thyroids of this disease, the pathologic serum. For our supply of these glands we have to thank Dr. Charles Mayo, of Rochester, Minn., who has kept us pretty well provided with the organs he has removed at operation.

By normal rabbit, dog or sheep serum is meant an antitoxic or antithyroidal serum obtained by inoculating these animals with the combined nucleoproteids and thyroglobulin separated from the normal human gland.

It is worth noting at the same time that the nucleoproteids in the pathologic gland are in far greater abundance than in the normal gland, and, as the character of these proteids may differ from the normal, so there may be some difference in the serum which can not be detected chemically, but which when tested clinically does produce a different result. At first the normal serum seemed entirely unsatisfactory and the pathologic serum appeared to be the only hope, but now, fortunately, the discrepancies between the effects of the two sera have not been found to be so great as was formerly believed. The normal serum generally shows a less active agglutinin reaction than the pathologic and those specimens of sera which may be considered of maximum activity have only been obtained from one or two out of a great number of rabbits and then were made by inoculations from the pathologic gland. In the administration of the different sera a certain proportion of the patients hitherto have not reacted at all to the normal serum, or if they did the result has appeared harmful rather than beneficial, and a few patients have not improved unless given the very best grade of pathologic serum which can be obtained only from exceptional animals. There is much yet to be learned, however, both about the dosage of any given serum and the frequency of its administration, and I have hopes that the normal serum can be made effective in a much greater proportion of cases than it has been in the past. For if a change for the better can once be established in a patient's condition the normal serum and even the less active specimens of normal serum have generally proved capable of checking the more or less frequent exacerbations of thyroidism. On the other hand, the normal dog serum, although by the agglutinin test the least active of all the sera, has seemed in a few instances to have given the best results.

---

[1] THE JOURNAL A. M. A., Feb. 17, 1906.

STATISTICS.

Our statistics include a total of 90 cases, of which 23 have been cured of all symptoms of thyroidism, 52 have been more or less improved and 11 have failed to improve (as yet) and four have died. Of the latter, one was an acute toxic case who immediately after the administration of the serum passed from an apparently moribund to a convalescent condition, but later, as the recovery was very slow, I operated on her with a fatal result. The second was in a chronic toxic state and, after improving under the administration of the serum, went home and some six weeks later suddenly dropped dead. At the autopsy there was found a pronounced status lymphaticus. The third case, one of the very acute toxic type, died, after improving in pulse, respiration and temperature, with every evidence of a hemorrhage into the respiratory center and, I think, in spite of the serum and not because of its administration; too little apparently was given to prevent the toxemic extravasation of blood. The fourth patient was losing ground and died soon after the administration of the serum, which in this instance differed from the other sera in that it was made only from the nucleoproteids, and hence was a pure cytotoxin (Case 38).

In the 54 personally treated or supervised cases, 15 patients have been cured and 29 improved; six cases were failures and four deaths occurred. In many of the improved cases the patients, I think, are really cured, but as several months must elapse before the result can be determined they can not yet be passed on, and the same can be said of those which have apparently failed. I have several times been surprised to find patients whom I have dismissed as unbenefited after a short trial return a few weeks or months later showing considerable change for the better. I believe, therefore, that if even the slightest improvement in almost any one subjective or objective symptom can be detected within the first two weeks of treatment there is a fair prospect of ultimate cure. If a patient does not at first respond, different grades of sera should be tried, as well as sera from different species of animals, and, if possible, that which I have called the pathologic serum; by varying the dosage and intervals and noting the results much more success can be expected than under any other method of treatment.

PROGNOSIS.

In judging the probable results of the injections the most important factors to be considered are, first, the kind of thyroid possessed by the patient and, next, the duration of the disease and its clinical type. Histologically it is possible to recognize four fairly distinct types of gland; one of these shows increased vascularity, another simple hypertrophy with increase of colloid, and another great increase of epithelium, while in the fourth type there is a marked anatomic change with a loss of the greater part of the thyroid structure. The last represents the terminal stages of a chronic thyroidism and is probably hopeless from a therapeutic standpoint. Some clinical distinction can also be drawn between these different kinds of thyroids. Patients who have soft thyroids respond more easily to the serum than the patients with hard glands and, as a general rule, the smaller the organ the better is the prognosis. The large, hard glands with an irregular and nodular surface, especially if the superficial veins of the neck are numerous and dilated, are, I believe, incapable of much, if any, betterment and belong in the fourth histologic class.

As to the type of the disease, the acute toxic cases with fever seem to do the best with the least serum and at the same time they show the least reaction; and there also seems to be little difference whether the normal or pathologic serum is used, provided, only, it is known to possess considerable activity by the agglutinin test. Apparently this is because the thyroid has not had time to become greatly altered and is approximately of normal structure. I think, however, that the pathologic serum is a little better than the normal for these cases, but the difference is so slight that it is well within the limit of error in observation. But all the chronic forms of the disease respond better to the pathologic than they do to the normal serum and, although the distinction is far from being exact, the variation in the kind of serum required points to the probable condition of the thyroid. As a general rule the more nearly normal it is the better will the normal serum act.

The chronic toxic types of the disease with severe symptoms both of thyroidism and of the secondary lesions dependent on disturbed circulation present the worst prognosis and are the least amenable to this or, in fact, to any form of treatment. The thyroids of these patients are generally large and hard and of irregular outline and the veins of the neck numerous and dilated. As histologically there is very little of the original gland structure left in these cases, it is difficult to conceive of any benefit from a specific antithyroid serum. Nevertheless, one such patient (Case 34) for a time at least improved.

Of the atypical chronic class, those whose chief complaints have been disordered digestion accompanied by fermentation, abdominal or thoracic pain and bad tachycardia, have also generally proved therapeutic failures. The psychopathic and neuropathic cases must, of course, have a poor prognosis unless the original toxemia can be checked before organic nerve lesions have been produced.

THE REACTION TO INJECTIONS.

The reaction to the injection of the serum is of two distinct kinds. One is fortunately rare and occurs within about five minutes of the injection. There is a sudden dilatation of all the superficial capillaries; this "blush" may be succeeded by cyanosis and is accompanied by a feeling of distressing dyspnea and faintness with rapid and feeble pulse; nausea and vomiting and diarrhea follow. These somewhat alarming symptoms pass off in an hour or sooner, if diffusible stimulants are administered, but the patient remains weak and uncomfortable for about a day.

The other reaction is fairly constant and, as a general rule, seems a necessary preliminary to the subsequent improvement. At the point of the injection there is immediately some burning sensation which is followed within a few hours by considerable swelling and erythema which may extend from the shoulder to the wrist when the injection is made in the arm, and continues for several days. This erysipeloid edema has sometimes been much more pronounced with the pathologic than with the normal serum, but the pathologic serum, though causing greater local redness and swelling, gives rise to less pain than the normal. Then at about the same time or some twelve hours after the injection there is generally some fever with increase in the tachycardia or irregular heart action and often diarrhea which may last a day or so. If another injection is given in the other arm before the subsidence of the swelling in the first arm the latter will be made worse and the constitutional symptoms intensified. Indeed, I believe by pushing the serum or gently increasing the dose there might be produced a fatal result. At all events, by repeating the dose too often the patient can be so exhausted that harm rather than good is the immediate consequence. In only a few instances have I seen this constitutional reaction postponed till the end of five or six days; and then it seemed to be connected with menstruation, which began in these particular patients about that time. For the serum, if administered just before or at the beginning of menstruation, may cause the ordinary reaction to be increased, and hence the date of the monthly period must always be ascertained and an injection postponed until the flow of blood has at least nearly ceased.

ASSIMILATION OF THE SERUM.

In the administration of the serum the patient should be put to bed for the first week; no restriction in diet is necessary beyond plain wholesome food without stimulants, except in the toxic cases and in patients with diarrhea who will need more or less careful feeding. Then 1 c.c. of a serum which has been proved fairly active by the agglutinin test is given hypodermically into the subcutaneous tissue in the back of the upper arm between the skin and muscular fascia. I have always selected this region, as it is accessible and free from veins and is loose enough to permit of considerable swelling without undue pain or danger of sloughing. The local reaction around the point of injection is best treated by a wet dressing of a 1 to 60 or 80 solution of carbolic acid in water and the constitutional reaction which appears a few hours later, by the administration, every three or four hours, of about three grains of iodid of potassium with about five minims of the tincture of strophanthus. The iodid of potassium has apparently a specific effect on the thyroidism and aids greatly in checking any rapid or irregular heart action. After all signs of the reaction have subsided there should be some improvement in the subjective symptoms. If an active pathologic serum has been employed the improvement occurs a little earlier and is a little more marked than with the normal serum. The restlessness, the feeling of discomfort, the insomnia, and the "thumping" of the heart subsides first and then the pulse becomes slightly slower and stronger. The best results are obtained by giving from four to eight injections of 1 c.c. each every third or fourth day or sometimes at shorter intervals, but waiting each time until the previous reaction has subsided. Some degree of immunity at least to the constitutional reaction seems finally to become established. The acute toxic cases with fever, as stated previously, have not shown any reaction, but after the first day have improved steadily and quite rapidly so there seems no reasonable expectation of any disagreeable reaction in these cases. As they are the most dangerous type of the disease and very apt to prove fatal, especially if they show any degree of cerebral symptoms, the possibilities of the reaction should be disregarded and an active serum pushed by the administration at intervals of 24 hours of 1 c.c. at a dose which may be increased by one-half a c.c. each 24 hours until some noticeable improvement is obtained or until a half-dozen doses have been given.

All the other forms of the disease do not do so well, and some judgment is necessary to determine both the amount of the dose and the frequency of its repetition. About 1 c.c. of an active serum has proved a useful average quantity, but some variation may be required. A small dose of five or ten minims, especially if the serum is not very active, seems to stimulate the thyroid and to make the general condition appreciably worse; and a large dose of 2 or 3 c.c. has produced such alarming symptoms of rapid and irregular heart action that I believe a fatal result could thus be obtained. But within these limits a certain amount of experimentation is necessary; if the usual 1 c.c. dose does not prove beneficial after a couple of trials, 1.5 c.c. or 2 c.c. can next be employed. It will often be found that this change will cause less reaction and more benefit than decreasing the amount. Occasionally, however, .5 or .25 c.c. of very active serum yield the best results; or a serum from another species of animal can be tried. Then after giving some half-dozen injections at intervals of three or four days the subsequent repetitions have to be considered. Too frequent and too long continued treatment seems to do harm rather than good and to produce a condition of muscular weakness and prostration which is as bad or worse than that due to the primary thyroidism. Therefore, the serum should only be administered about once a week for three or four months and after that at longer intervals. Exacerbations of the thyroidism may appear from time to time, but always less and less frequently until finally the patient remains well. As a guide in the administration of the serum a vicious circle hypothesis for the etiology of the condition of thyroidism is of some service. All that is necessary is to break this circle by the inhibitive power of the serum on the thyroid epithelium and then to give no more injections than are demanded to keep it broken until a return to the normal equilibrium is obtained. This seems to require months, but the present indications are that it will occur in the majority of the cases, and I am beginning to have some hopes for even the chronic toxic cases. But a favorable outcome can not be hastened by increasing the quantity or frequency of the dose and, except in the acute toxic cases with fever, which alone are strikingly amenable to this treatment, there is nothing spectacular in the recovery. It is very slow and often intermittent.

The changes in the size and character of the thyroid perhaps better than anything else give an idea of what may be expected as to the rapidity of the general improvement. In the average case the circumference of the neck has shrunken about one-quarter of an inch a month, at first and then remained stationary for some weeks and later again decreased until it reached the normal size in a perfect cure. A thyroid which is smooth and large and rather soft, in other words one which has undergone simple hypertrophy at first softens and diminishes in size quite perceptibly and rapidly, apparently from loss of colloid and congestion. Then there is a long period when very little shrinkage or change can be detected, except a slightly lowered position. During this time it becomes firmer and harder at menstruation or in slight exacerbations of the disorder which generally indicate a repetition of the injection. Later, or at the end of four or five months, it may once more soften and be gradually reduced to a normal size. On the other hand, a thyroid which is hard at the outset shows the first sign of improvement by becoming softer. I do not believe that the large glands, whether soft or hard, ever entirely disappear, for at least one of these patients who has remained entirely free from all symptoms, even the exophthalmos, for several months still has a quite perceptible fibrous goiter. Occasionally also after the administration of the serum patients complain of some soreness or pain in the region of the thyroid or throat but I have never under these conditions noted anything like active inflammation in the gland. Those who have recovered completely have required about six months of treatment and observation before all signs of the disease, or more accurately of overactivity of the thyroid, have disappeared. But if improvement in almost any one symptom, either subjective or objective, can be detected during the first week or two of treatment, even if the pulse or other signs do not respond, the case should not be given up immediately as hopeless. Slight variations can be made in the dosage of the serum or another kind of serum should be tried, bearing in mind that some patients, especially these with chronic toxic or severe symptoms of long duration and generally possessing hard or very vascular thyroids, will not respond at all to the normal serum, but will to the pathologic, or sometimes only to a particular pathologic serum of exceptional activity.

A few patients, especially those in middle life or older, who generally have small thyroids with slight or no exophthalmos and rather severe nervous symptoms, show a somewhat peculiar reaction. They improve in sleep and in the restless discomfort, and then if the injections are continued they become weaker and are made worse than ever. But if as soon as the initial improvement is noted, the injections are suspended and the patient put under the best hygienic outdoor conditions, they will gradually improve very much and at the end of two or three months, treatment can be resumed. It requires considerable judgment, coupled with some experience not to give such cases up as hopeless at the end of the first week, but many of the patients I believe will ultimately recover if patience is practiced along with the regulation rest treatment combined with the serum administered at long intervals. It is possible that some element of myxedema may here be involved and that thyroid feeding rather than antithyroid injections may be indicated.

The convalescence in these as in all the other rather severe forms of thyroidism is very like that from typhoid fever or any other exhausting disease, and is exceedingly slow and often interrupted by exacerbations of the process which should be met with another injection of the serum. But after a patient has once made good progress towards recovery and then shows signs of relapse it is noticeable that almost any normal or pathologic serum, if administered without delay, will stop the symptoms. At the best, a moderate proportion of the chronic cases of this disease, especially those patients past middle age and with hard glands can not be benefited by either the normal or pathologic serum and for these, after a fair trial for at least a month, I think that surgery offers the best hope.

To correct an erroneous impression of this serum which seems to be prevalent, I must repeat that only in the rare acute cases can any quick results be expected and then there is a long period of convalescence before recovery is completed. The majority of the patients respond very slowly and several weeks may elapse before they are evidently improved. I believe, however, that with greater experience in the preparation of this peculiar remedy and with care and patience in its administration many of the chronic cases can finally be greatly benefited if not ultimately entirely cured.

The details of all the histories can be found in The Transactions of the Association of American Physicians of 1906. Only typical examples of two cases are given here and in addition two of the four fatal cases. In the other two fatal cases the patients had first been improved by the serum and the deaths took place long after the cessation of the injections; one from operation and subsequent very acute thyroidism, and the other apparently on account of a condition of status lymphaticus. Of the two fatal cases here given, the first (Case 37), I think, died from an unusually acute and severe form of the disease and not at all because of the administration of the serum.

The fatal ending in Case 38 might with some reason be ascribed to the effects of the serum, although it must be borne in mind that the disease was rather acute and severe and the patient had previously been losing ground. She received a serum made entirely from the nucleoproteids of a thyroid gland taken from a patient who had died of exopthalmic goiter. It differed from the other sera in not having any globulin combined with the nucleoproteids in the inoculations and so should serve as a warning for using great care in the administration of such a serum. I had several times previously given this same serum in much larger dosage (though at not quite such short intervals) and seemingly with benefit to others, but since this experience I have never dared to give a pure cytotoxin at less intervals than five days or a week, as the effect may be cumulative, and cause no symptoms for two or three days.

Case 13.—J. McG., age 27, single, female, has been nervous for years, but first noted typical signs two years ago. She had been confined to bed for a month, with loss rather than gain in strength. There was a moderate-sized soft goiter; neck measured 14 inches in circumference; pulse was from 110 to 130 with throbbing heart and pulsating thorax.

Treatment.—January 12 to 22, she received in divided doses 5 c.c. of normal rabbit serum and 1 c.c. of pathologic serum with slow improvement in subjective symptoms and slightly lowered pulse rate. She left the hospital for home a little stronger, with less heart throbbing and with the neck ¾ of an inch less in circumference. Pulse was 110. After this at intervals at first of four days and later of a week she received injections of different normal and pathologic sera, apparently improving more under the latter than the former and with more reaction. The pulse during March remained about 100 but of good quality. The thyroid was firmer and a little smaller, and she was able to resume work. The last injection was given April 14, and May 6 the pulse was 84, the thyroid small and again soft. The neck 12¼ inches in circumference and the general condition normal. Since the first of March she has been working steadily as an office nurse and stenographer and has been conscious of no physical disability. At present (August, 1906) there is no exophthalmos, no tremor, no abnormal subjective symptoms, the pulse is about 80 and though there is still a slight fulness of the neck, it is so slight that she can be reported as cured.

CASE. 32.—A. P., aged 29, single, Swedish domestic, entered the Presbyterian hospital under the care of Dr. W. G. Thompson, Dec. 11, 1905.

Examination.—She had a temperature of 102, pulse of 120, and respiration of 25 to the minute. There was a slight but perfectly plain, soft symmetrical goiter, precordial heave, marked pulsation in the cervical vessels and evident dyspnea, but no exophthalmos. She was very weak and tremulous, and had some nausea and diarrhea. She gave a history chiefly of this and "nervousness" and sleeplessness for only the past two weeks, and had therefore an acute type of the disease. The condition grew rapidly worse, and December 16 the temperature was 104, the pulse 136 and the respirations 36; the tongue was dry and hard, there were ecchymotic spots in various parts of the body and evident thrombosis in some of the veins of both legs. The picture was one of a severe and probably fatal toxemia.

Treatment.—December 16 and 17 she received 1 c.c. and on the 20th 2 c.c. of a very active pathologic serum and no other medication then or afterward. There was no appreciable reaction and after the second dose there was a very marked improvement in all the symptoms. December 22 the temperature, pulse and respiration were practically normal.

Result.—There ensued a steady through rather slow progress toward recovery. She was up and around the ward in the middle of January with no signs of the disease, except weakness, some anorexia and a soft thyroid which could be felt, but was not perceptible to sight. She left the hospital in February apparently well and when last seen on April 30 was on her way to make a visit in Sweden and presented no sign of disease.

CASE 37.—M. R., aged 18, single, female, first noted a soft goiter in October, 1905. For this she was given thyroid tablets. A month later she fainted in the gymnasium and symptoms of exophthalmic goiter were evident. After cessation of the thyroid feeding the thyroidism subsided but reappeared in December after a tonsillitis. During the next three months she became normal except for a small soft goiter. In April there were again slight signs of thyroidism but these disappeared until on May 4 a severe gastroenteritis occurred after some indiscretion in diet. On May 5 and 6, the signs of Graves' disease quite suddenly recurred and became severe with headache, great restlessness and tachycardia. On May 7 the pulse was counted at from 200 to 210. The respiration was labored and between 30 and 40 to the minute. On May 8, 9 and 10 she received 1 c.c. of a moderately active pathologic serum without any reaction except a slight and transient local redness. The heart action and respiration began to improve on May 9 and on May 11, the pulse was about 90 and good, and the breathing 23 to the minute. The intense headache on May 8 and the restlessness grew worse and on May 10 stupor developed and deepened into coma on May 13, and a right-sided, incomplete hemiplegia was then noted and this was soon followed by Cheyne-Stokes respiration. Breathing then stopped completely about 10.45 a m., and as the pulse continued at from 110 to 120 but of good quality, artificial respiration was begun and continued until 5 p. m. The condition then became worse and the patient died. No autopsy was permitted.

Remarks.—I believe that the cause of death was a hemorrhage into the respiratory center and that the fatal ending took place not because of, but in spite of the serum. The administration of serum should have been begun earlier and pushed more vigorously. It is worth noting that just after respiration ceased at 11 a. m. on May 13, I gave 2 c.c. of an active normal serum in the preparation of which much thyroglobulin was used and hence, theoretically, the serum contained considerable antithyroglobulin. About two hours after its administration there was a noticeable improvement and natural respiration was possible for about 20 minutes. Respiration then again failed and could not be restored.

CASE 38.—A. G., aged 15, single, female, had suffered from typical symptoms of the disease, but with no exophthalmos for about four months.

History.—She entered the Presbyterian hospital in January, 1906, and received all the usual treatment with a steady, slow deterioration. She was given different specimens of serum without any change and reacted only to a very active pathologic serum from one particular rabbit. This reaction consisted in an exacerbation of all symptoms with fever, lasting for about twenty-four hours after the injection and followed by a brief improvement and almost immediately by a recurrence of all characteristic symptoms.

Examination.—May 20, 1906, the pulse varied from 130 to 150. There was a hard symmetrical goiter of moderate size. The neck measured 13 inches in circumference; the heart was dilated and overacting; the temperature ranged between 99 and 101 and the patient was so weak as to be unable to sit up in bed without fainting.

Treatment.—A very active pathologic serum made only from the nucleoproteids of the thyroid of a patient who had died of this disease, was employed. This was used as no other serum had shown the least effect (except one, and that only with transient benefit). At 10 a. m. and at 11 p. m. May 20, and at 10 p. m. May 21 she received 10 minims of this cytotoxin. There resulted only a slight local erythema until the morning of May 26 and then the temperature dropped from 100 to 96, the pulse began to rise rapidly from 130 to 180, and the patient became extremely restless, vomited frequently, and in the afternoon passed into a condition of stupor. On the previous day the goiter, which had been hard, began to soften and shrink, and during the afternoon of May 23 could only be made out as a small soft mass not much larger than the normal gland. The circumference of the neck in these two days decreased from 13 to 11¼ inches. Three c.c. of an active normal gland serum were then administered in the faint hope of averting the apparently fatal result, as the normal serum can be supposed to contain at least some antithyroglobulin. Some hours later the pulse fell from 180 to 120 but the stupor continued and the patient died at 11 p. m., May 23. With great difficulty, the house physician, Dr. Mason, obtained only the thyroid gland, which showed the following changes as described by Dr. James Ewing.

Examination of Thyroid.—The material received for examination consisted of a portion of one lobe of the thyroid removed 2 hours after death and measuring 2.5 × 3 cm. This tissue was strikingly light yellowish in color as though very fatty and anemic; the consistence was greatly reduced; no colloid could be detected except in a very few small cystic areas from 1 to 2 m.m. in diameter. Although in general very anemic, the tissue showed a few pin-point hemorrhages. The tissue was hardened in 80 per cent. alcohol, in Zenker's fluid, and in Orth's fluid. Sections showed the usual changes of an active toxic form of exophthalmic goiter. There were visible marked cellular hyperplasia, many new alveoli, a few miliary hemorrhages, extreme granular degeneration of tubule cells, and extensive exfoliation of these cells. Much of this exfoliation appears to be due to traumatism applied during removal of the gland. Staining by osmic acid after fixation in Muller-formol shows comparatively little fatty degeneration. The colloid is limited to a few large alveoli containing semifluid colloid mixed with many exfoliated cells. The only changes that seem possibly referable to action of the serum are the anemia and the acute degeneration of the cells. Otherwise, the changes do not differ from those seen in the average case of acute fatal exophthalmic goiter.

Philippine Plants.—The *Philippine Journal of Science* issues a supplement dated April 15, 1906, containing a systematic description, by E. D. Merrel, of the flora of the Lamao Forest Reserve, comprising 1,151 species in 611 genera from the musci, vascular cryptogams and flowering plants, but not the fungi algæ and lichens. Four hundred and eighty-five species are trees and 201 shrubs and woody plants. The monograph contains 142 pages, but it is admitted that a large number of species occurring in the district have not been catalogued.

A SERUM HAVING THERAPEUTIC VALUE IN THE TREATMENT OF EXOPHTHALMIC GOITER.*

S. P. BEEBE, M.D., Ph.D.
NEW YORK.

A preliminary paper was published in The Journal, Feb. 17, 1906, describing the preparation of a serum having therapeutic value in the treatment of exophthalmic goiter. Since that date I have had a great deal more experience in the preparation of the serum, and its therapeutic effect has been carefully tried on many more patients so that it is now possible to describe improved processes for its manufacture and to state more nearly what its value is likely to be.

The theoretical basis was described in sufficient detail in the first paper. I may say, however, that since the publication of the article in the *Journal of Experimental Medicine*,[1] describing the experiments which led to the therapeutic application in exophthalmic goiter, I have made many more experiments of the same nature, and as a result it may safely be concluded that a serum having a high degree of specificity can be prepared by injecting the purified nucleoproteids of a given organ into some animal of alien species. The experiments have demonstrated, likewise, that absolute specificity can not be attained by this method, and I believe that no method will enable us to prepare a serum having absolutely specific properties.

At the time of our first report Dr. Rogers and I had used only the thyroid glands from two fatal cases of exophthalmic goiter as a source of the proteids. For theoretical and practical reasons, however, we followed these first experiments by others in which the serum had been developed by proteids derived from normal human glands obtained at autopsy. The method of preparation has been the same in each case and is given in detail below.

PREPARATION OF THE PROTEIDS.

Normal human glands obtained at autopsy are ground to a very fine hash by a special machine. From six to eight times the volume of 0.8 per cent. salt solution is added and the whole thoroughly shaken and allowed to extract for twelve hours in the refrigerator, chloroform and thymol being added to prevent bacterial growth. At the end of this period the coarser particles are removed by straining through gauze, the filtrate is centrifugated and finally filtered to remove the finest particles. The clear filtrate contains three classes of proteids, namely, nucleoproteids, globulins and albumins, the first two of which we wish to use. Nucleoproteids are precipitated by the addition of acetic acid to a frank acid reaction, using litmus as an indicator. I find a very marked difference between normal and goiter glands in respect to this precipitation behavior. It is rarely possible to obtain a definite flocculent precipitate by the addition of acetic acid to the extract of normal glands.

The normal gland contains a very small proportion of nuclear material and a relatively large amount of colloid. The glands can not be obtained in a perfectly fresh condition, the autopsies varying from 12 to 50 hours postmortem and, although the bodies are kept cool, there is opportunity for autolytic changes which readily occur. I have never failed to precipitate nucleoproteids from extracts of perfectly fresh normal glands of sheep or dogs, but it is often very scanty in amount, and if the glands are allowed to remain in a warm place for a few hours no precipitate will form.

Since the object is to obtain both nucleoproteids and globulin for injection, it has been found best to precipitate both together by making the saline extract acid with acetic acid and then to precipitate the globulin by the addition of an equal volume of saturated ammonium sulphate solution. After standing in the refrigerator for a few hours a voluminous precipitate has collected in such form that it may be filtrated out readily. These proteids are twice redissolved in alkaline sodium chlorid solution and reprecipitated by acetic acid and ammonium sulphate solution. After the last filtration the proteids are carefully removed from the paper and dialyzed in a parchment tube for four days with the addition of thymol as an antiseptic. Such a period of dialysis does not remove all the ammonium sulphate, but for the purpose of inoculating the animals there is no objection to the small quantity remaining. At the end of this period, the contents of the dialysis sack are made feebly alkaline with sodium carbonate, and the solution which contains the desired proteids is kept in the refrigerator. Just before injection, the solution is filtered and a definite quantity measured out. The final filtration removes all fragments of thymol, shreds of filter paper and any undissolved material remaining after the dialysis.

The above method applies only to those proteids which I have obtained from normal glands and is given in detail so that no one familiar with the simplest manipulations in physiologic chemistry will have difficulty in following them. In some instances the same procedure has been followed in dealing with the exophthalmic goiter glands.[2] In other cases we have tried to determine how a serum made from the nucleoproteids alone would compare with that made by including the globulins. For this purpose we have prepared nucleoproteids after the same method that was followed in preparing them from the organs of dogs, namely, by repeated precipitation with acetic acid, accompanied by careful washing. The saline extract is prepared in the same manner as with the normal glands, nucleoproteids precipitated by the addition of acetic acid and the precipitate allowed to settle in tall, narrow glass cylinders, washed by decantation until the supernatant fluid is free from proteid and then dissolved by the addition of sodium carbonate to alkaline reaction.

After filtering this solution the nucleoproteid is precipitated by acetic acid and the process of washing repeated. The final product in some instances has been dried at a low temperature in a special apparatus, which has been described elsewhere. Such dried proteid may be kept for an indefinite time without harm. In other instances the nucleoproteid precipitate has been kept in tubes in the refrigerator with the addition of chloroform as an antiseptic. When this proteid is desired for injection it is dissolved by the addition of sodium carbonate to a faint alkaline reaction to litmus. It is of some importance that this reaction be carefully determined. If the injected material is acid in reaction, or if the reaction is too strongly alkaline, a fatal peritonitis is likely to result. In some instances it happens that the nucleoproteids dissolve very slowly and incompletely on making the suspension alkaline. Such a condition does not prohibit the use of the proteid, however, for I have found that an active serum can be obtained from its injection.

---

* From the laboratory of the Huntington Fund for Cancer Research, Department of Experimental Pathology, Cornell Medical College, New York.

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Beebe: Jour. of Exper. Medicine, November, 1905.

[2] It is a pleasure to record here our obligations to the Drs. Mayo for their courtesy in furnishing us with glands at operation, and also to Dr. L. B. Wilson for his painstaking care in packing them for shipment. Without their assistance it would have been impossible to do much of the work which is now reported.

INJECTION OF THE ANIMALS.

Three species of animals have been used for developing the serum, namely, rabbits, dogs and sheep. By far the largest part of the serum has been made in rabbits, but we have been using sheep in the more recent work for experiments with the normal thyroid proteids. For some unexplained reason, dogs have not yielded an efficient serum and their use has been discontinued. It is not possible to predict the activity of a serum which any given animal may produce. The factor of personal idiosyncrasy is noticed here, as in most matters relating to immunity. Serum has been obtained from a large number of rabbits, both for the thyroid experiments and also in continuation of the work on cytotoxins, and it is possible to say as a result of it that the best serum can be produced in a certain type of animal, namely, large buck Belgian hares. The animals should be full grown young adults, weighing from six to eight pounds, and should be well fed and cared for throughout the immunization period. It occasionally happens, however, that an animal in what appears to be prime physical condition and having the best care fails to produce an active serum. Investigators who wish to repeat these experiments should bear these facts in mind.

The injections have been made into the peritoneal cavity. Subcutaneous injections almost invariably result in abscesses. The technic is simple. A small area on the abdomen is shaved and a small needle hole burned in the skin with a hot wire. A short needle with a dull point should be used to avoid puncturing the intestines. The amount of material injected is determined to a considerable extent by the behavior of the rabbit, particularly with respect to the loss in weight. In general, however, the proteid from 10 grams of thyroid is employed for an initial dose in a six-pound rabbit, and the subsequent doses determined by the loss in weight. The sheep, which in the beginning weighed 125, have had injections of 100 cubic centimeters of solution, an amount which represents the proteid from 80 grams of normal human thyroid gland. One of these sheep has been bled four times and has had in total the proteid from more than 700 grams of normal human thyroid gland during the period from December 20 to May 4. With the rabbits, five injections, six to eight days apart, have been given and the animal exsanguinated from the carotid on the eighth day after the last injection. The sheep have been bled after analogous treatment, but quite enough serum can be obtained without exsanguinating the animal. After three additional weekly injections the animal may be bled again. The treatment is a severe experience, however, and must be given cautiously.

PROPERTIES OF THE SERUM.

At the time of our first publication Dr. Rogers and I had employed no means of testing the activity of the serum except its direct inoculation into patients having exophthalmic goiter and noting the reaction produced. The method of standardizing diphtheria and tetanus antitoxins can not be successfully applied in this case. Later in the work, when I came to the point of testing the agglutinin and precipitin reactions on thyroid fragments and proteid, respectively, it occurred to me that we could use these means for standardizing the serum if it proved that the agglutinating action was in some constant degree parallel to the therapeutic effect. To determine this point I tested many different sera which had been in the laboratory for some time, and which had been thoroughly tested clinically. The results proved to be nearly uniform and were sufficiently promising to lead to a continuation of the study on these lines. In general, it has been found that the more active the agglutinating powers the more marked the local and general reaction following injection. Here again the personal idiosyncrasy of the patient enters, and we find that a serum that agglutinates well produces a vigorous reaction in most patients, but such a result is not invariable. In order to have comparable conditions a definite method has been followed in making these agglutination tests.

Twenty-five grams of normal human thyroid, which have been pulverized in a special machine, are extracted for two hours in 100 c.c. of 0.8 per cent. salt solution; the extract is next strained through gauze and centrifugated for four minutes at uniform speed. Such treatment precipitates the coarser particles firmly in the bottom of the tubes, while the finer fragments remain in looser suspension below the clear extract, but above the coarser impacted mass. The finer particles can be separated with a considerable degree of sharpness from the coarser, and after diluting with 0.8 per cent. salt solution to 250 c.c. and straining through cotton a suspension is obtained which in many ways can be compared to a bacterial emulsion. In the ice box or incubator the fine particles settle very slowly, and in a manner quite different from the agglutinating action which is obtained by the addition of a specific immune serum. In order to have comparable results, it is necessary to follow the method of preparation of the emulsion with some considerable care, for I have found that the time and completeness of the agglutination depend in no small degree on the concentration of the suspension.

As regards the serum, the time required depends on two factors, namely, the potency of the serum and its concentration. The method we have followed is to prepare several tubes containing the same suspension of thyroid cells, to add varying quantities of immune serum and to incubate at 38 C. By noting the length of time required to produce the flocking in various concentrations of serum we can form an idea as to the relative activity. Such tests made under comparable conditions with a large number of sera show that the agglutinating power is in a remarkable degree parallel with the vigor of the local and the constitutional reaction produced by the serum on injection. In this respect, it may differ from bacterial antitoxins in that the latter are not supposed to show any definite relations between their agglutinating and bactericidal and antitoxic properties. I do not wish to be understood as saying that the most active serum will effect a cure in a shorter time than the weaker; there are many other factors involved beside the simple antagonistic action of the serum for a toxin.

Another point of considerable interest is the fact that the serum is highly specific in its agglutinating properties. Suspensions of other human tissues, such as muscle, liver, lymph gland, round-cell sarcoma, are not agglutinated except occasionally by high concentrations after long standing. A serum which in a concentration of 1 to 2 agglutinates thyroid fragments in 30 seconds shows very feeble agglutination of muscle fragments in ten hours. After such a lapse of time it is often difficult to distinguish flocking from mere settling, but the supernatant fluid is somewhat clearer in the tubes to which the serum has been added.

HEMOLYTIC PROPERTIES.

In the first paper dealing with cytotoxic serum, I stated that there was no reason for believing that the action was due primarily to hemolysis or hemagglutinative properties which were demonstrable in strong concentration in test tube reactions. Histologically, we could find no positive evidence that would lead us to such a conclusion, while experiments *in vitro* showed that in such a concentration as the serum was used *in vivo* no hemolysis or hemagglutination was evident. The therapeutic dose of thyroid serum has never approached nearer than 1/100 of that used in the dog experiments, and it is hardly possible that this is a concentration sufficient for the feeble hemolytic property to show itself. We have no satisfactory evidence, however, that the results of test tube experiments apply in the body, and it is conceivable that a serum may be hemolytic *in vivo* in much more dilute concentrations than are required *in vitro*.

We have had some opportunity to test the matter clinically and have found that the serum treatment generally causes an increase in the per cent. of hemoglobin and number of erythrocytes. Such a result may be due to the general improvement in health and probably not to a direct effect on the blood-forming organs. These clinical results, however, are based on too few cases to be considered final.

THERAPEUTIC EFFECT.

It is a matter of much interest to consider how far our primary objects can be attained by the use of the serum. Our laboratory experiments have shown that it has highly specific action on the thyroid tissues and that it is not markedly hemolytic, but its real specific antitoxic and cytolytic action must be determined by animal experimentation. We have had human subjects for most of this work, and fortunately only one patient on whom the serum has been used has thus far died, so that our conclusions must come from the clinical results. The serum is based on the theory that exophthalmic goiter is a toxemia and that the toxin in question is the thyroglobulin. If we find that administration of the antiserum causes an immediate and striking improvement in the toxic condition we may reasonably infer that it is due to a neutralization of toxin. In a few severe cases we have noticed a striking improvement in all symptoms follow within forty-eight hours. Such, for instance, occurred in Case 7 in Dr. Rogers'[3] report already printed. This patient is now perfectly well. Cases which show such behavior are generally those having an acute development with a soft thyroid gland, which is probably in a condition of simple hypertrophy and contains a large amount of colloid matter with but little relative increase in the number of cells. Such facts are best explained by the toxemia hypothesis, and constitute the only positive experimental evidence we have for the belief that the serum contains a true antitoxin.

It must be stated, however, that only a small proportion of the cases show the striking immediate improvement which is suggested above. The majority show slow gradual improvement which, although positive and undoubted, does not afford such convincing evidence of antitoxic action. The majority of cases which we have treated have been of the slow developing chronic rather than the acute type. The gland in these cases is more cellular and presumably the cytotoxic element in the serum, in the comparatively feeble doses in which it is administered, can not act with sufficient vigor to cause immediate and rapid diminution in the gland. More rapid destruction might possibly result in a dangerous acute toxemia from the decomposition products of the gland. It is a well-known fact that manipulation or massage of the gland is likely to be followed by an exacerbation of symptoms. It would not be desirable to produce the same class of lesions in the thyroid that were found in the livers and kidneys of the dogs treated with specific cytotoxins, but we do wish to inhibit the gland and to bring its activities back to the normal. Accordingly, a much smaller dose should be used. I confess that I feel much less sure of my ground in dealing with the cytolysin than I do with the antitoxin idea.

There is, however, some evidence which should not be ignored. My previous work with dog organs demonstrates that it is possible to develop highly specific cytotoxic serum from nucleoproteids, and, since these proteids from the thyroid gland are included in the injection, a similar property of the serum should be produced as in the former case. I have had some indications that a partial suppression of kidney function may be produced before we have positive evidence of a kidney lesion resulting from the administration of a nephrotoxin.

Aside from this, I know of no facts which show that inhibition of function may precede lesion. We do not know to what extent it is necessary to injure an organ by such means in order to inhibit its function. It is a purely hypothetical assumption, but it may be easier to inhibit a tissue which is maintained in a habit of excessive unstable activity than it is to affect one in a stable physiologic condition. For instance, the antipyretics reduce fevers, but have little or no effect on normal temperature. A pathologic and a physiologic condition are not precisely comparable. The main fact, however, is that the administration of the serum causes a decrease in the size of the gland and in a few cases it has been restored to apparently normal size. A vicious habit has somehow been broken and it has seemed to me reasonable to ascribe the result in part to the cytolysin properties of the serum.

There is some advantage in having the antithyroid serum developed in two animal species. In some cases the sheep serum, which is developed from normal glands, has been given at weekly intervals for from eight to ten weeks in chronic cases. It was efficient in suppressing the symptoms and caused much improvement, but at the end of this period there were exacerbations which the sheep serum, even in increased doses, would no longer control, although in the beginning it had proved perfectly satisfactory. The serum no longer caused a local reaction, although this, too, had at first been quite pronounced. It seemed possible that the sheep serum had been continued for so long a period that the patient had developed an anti-antitoxin and was, therefore, to a very large extent immune. When rabbit serum, which gave a weaker agglutinin reaction, was administered to these patients the symptoms were promptly controlled. The immunity to the sheep serum did not in any way interfere with the biologically different antitoxin. The two diseases in which serum has been employed most, diphtheria and tetanus, are both acute and accordingly such a possibility as the formation of an anti-antitoxin has needed no consideration. In those chronic cases of exophthalmos in which serum treatment must be long continued, however, it will probably be necessary to change the biologic character of the serum occasionally in order to prevent such interference.

---

[3] Rogers: THE JOURNAL A. M. A., February, 1906, p. 487.

SERUM FROM THE NORMAL AND THAT FROM THE PATHOLOGIC GLAND.

The results reported in the first communication were all obtained by the administration of serum developed from the pathologic gland. Our more recent experiments have demonstrated that it is possible to develop a serum of high therapeutic efficiency from proteids of the normal gland, and it is hardly necessary to add that these results are of considerable interest to both the physiologist and the clinician. For if we had found that serum from the normal gland was quite inefficient it would indicate the presence of a special toxin in the pathologic gland. It would mean not simply excess of function, but rather a complete change in the character of the secretory activity.

Our results are in accord with the results of chemical investigation, for, as I have stated previously, such study has not revealed any special toxin. It is, indeed. Oswald's[4] belief that the exophthalmic goiter thyroglobulin is poorer in iodin than the normal secretion, but this does not indicate a radical difference in the remaining portion of the proteid. There is a very wide variation in the amount of iodin which the normal gland contains, and it is hardly probable that the iodin variations which Oswald has found in the exophthalmic goiter secretion would so alter the proteid molecule from that of the normal as to render the latter unfit to serve in the immunizing process. The biologic character which is of the greatest moment in the process of immunity is probably given by the remaining portions of the proteid rather than by the iodin group, so that I am of the opinion that the exact iodin content is a matter of small importance for our purposes.

The most active serum which I have thus far developed has come from the proteids of certain glands removed at operations. The activity of this serum has been expressed in its agglutinin reactions, the local and constitutional reaction on injection, and its therapeutic effect. In all three phases it has exhibited the highest potency of any serum yet produced, but I am not convinced that its action shows a difference in quality rather than intensity from that of normal glands. There are reasons which, I believe, explain the particularly good quality of this serum, and these are not dependent directly on its being developed from exophthalmic goiter glands. The glands were removed at operation and were received at the laboratory in perfectly fresh condition and consequently the proteids derived therefrom had suffered little by autolysis; second, the serum was developed in young adult Belgian buck hares which stood the injection very well, and, as I found, this is the particular type of animal that gives the best serum. The normal glands from which the serum is made are obtained at autopsy, and this fact makes it impossible to get them in a fresh condition. Practically all our normal serum has been developed in sheep and these animals do not produce so active a product as the hares. This latter statement holds true, also, for the cytotoxins produced from dog organs. We have had striking and immediate improvement follow the administration of both the normal and the pathologic serum and, in my opinion, the facts do not warrant the conclusion that there is any radical difference between the two. This question is one of the highest complexity and can only be settled by long-continued experimentation on a large number of patients. We must take into consideration the great difference in reaction which patients show to the same serum as well as the considerable differences in the quality of the serum produced by the same class of animals under similar treatment.

If the hypothesis regarding the antitoxic and cytotoxic property and their dependence on the injection of thyroglobulin and nucleoproteid, respectively, is correct, then we should find it advisable to vary the activity of the serum in respect to these two factors in order to meet the indications in the various types of cases. Experiments of this sort are now under way, but we can not as yet make any statement of results. The hypothesis may break at any point and it is not safe to make it too extensive.

It is of interest to consider in this connection the condition of the gland from the one fatal case treated with serum. The case was one of long standing; the patient, a man, had had the disease for ten years and was in extreme condition when admitted to the hospital During his period of treatment, which lasted for six weeks, he made good general improvement in all symptoms. The circumference of his neck diminished three inches during this time. His death occurred a few weeks after leaving the hospital, and at the postmortem the gland was found to have a tough, beefy consistency quite different from the soft condition on entrance to the hospital. Histologic section showed the gland to be very cellular, practically without colloid, and in many places the cells were in a partially atrophic condition, which suggested the beginning of the changes characteristic of myxedema. We have no section of the gland showing the condition at the beginning of treatment, but the change in the consistence and size of the gland, together with the postmortem condition, favor the belief that the gland at first had considerable colloid which disappeared during the course of treatment. In this respect the result agrees with the conditions found by many investigators in the thyroid glands of animals treated with cytolysin serum. The patient was treated with serum made from the normal glands only. Since the above was written we have examined the gland from a second fatal case after serum treatment and have found an extensive acute degeneration of the gland. The patient received small doses of serum at frequent intervals. The gland very rapidly diminished in size and the patient died on the fourth day after beginning treatment.

CONCLUSIONS.

When all the conditions are considered I believe it is fair to conclude that the serum is an agent of considerable value in the medical treatment of exophthalmic goiter. It has been used in all manner of cases in which it was possible to make a diagnosis, and in some cases in which the diagnosis was doubtful. Only a comparatively small percentage of these have been of recent development. A small percentage of trials has resulted in failure, a much larger number in improvement, while an encouraging number of individuals have been completely cured. In making up the statistics which are given here, all the cases of which we have any record have been included. These have covered an area from Maine to California, and in many instances the physician in charge of the case has had no other experience with the disease but the one case immediately under treatment. A number of the patients have begun treatment so recently that it is not possible to make any safe conclusion of the outcome. The number of instances of cure and improvement are so large that they can not be ascribed to coincidence, and under favorable conditions I believe much can be accomplished by careful serum therapy.

---

[4] Oswald: Hofmeister's Beiträge, 1902, vol. ii, p. 545.

414 East Twenty-sixth Street.

THE SURGICAL TREATMENT OF EXOPHTHALMIC GOITER.[*]

FRANCIS J. SHEPHERD, M.D., C.M., LL.D. (Edin.), F.R.C.S.E. (Hon.)
MONTREAL.

The treatment of exophthalmic goiter by operation is a comparatively recent procedure and its usefulness as a means of relieving this serious disease is not yet conceded by all. In many cases operation is contraindicated, while in others operative measures result often in complete cure, or almost always in improvement.

The cause of this disease is not yet sufficiently established, but that many cases are caused by an excess of thyroid tissues is self-evident. Yet in some cases (10 per cent.) it is said there is no enlargement of the thyroid and in many the enlargement is not marked. In some cases, again, enlargement of the thyroid is a late symptom in the disease, while in others the enlargement precedes the other symptoms by months and sometimes years. Goiter has been known to exist for years without producing any marked symptoms of this disease and then they appear. The parenchymatous goiter may be present for some time without giving rise to any symptoms, and the enlargement of the thyroid may only be accidentally noticed, by feeling the collar band too tight, or observing a fulness of the neck when looking in a mirror. Some attribute exophthalmic goiter to atrophy of the parathyroids or their infiltration by fat. In my cases where the parathyroids had been removed with the thyroid they have been found perfectly normal in appearance and not infiltrated or atrophied.

The idea that exophthalmic goiter is due to a disorder of the sympathetic and vagus is now abandoned by almost all, and the operation of excision of the sympathetic ganglia and trunk in the neck for the relief of this disease may now be looked on as an obsolete operation. That the nervous system is involved in the affection goes without saying, but the cause is not in the nervous system, but in the thyroid gland, and the profound effect produced on the nervous system is brought about "by the action of certain substances which find their way into the circulation as a result of deranged function of the thyroid gland"; overactivity of the thyroid, or the secretion of an enlarged thyroid produces too much oxidizing material.

Therefore, the probable cause of exophthalmic goiter is hyperactivity and hypersecretion of the thyroid, and the same condition may be produced by artificially feeding an individual with thyroid extract. It is certain that many patients are cured by the removal of the excess of thyroid tissue, and the natural inference is that the excess of thyroid tissue causes the symptoms in those cases in which this organ is enlarged. It is possible that there may be other causes (and in this connection the thymus can not be ignored) in the production of complex symptoms of this disease, for these symptoms may exist without special enlargement of the thyroid, but where there is enlargement the removal of a sufficient quantity of the gland tends to the cure or relief of the symptoms.

Dr. H. MacKenzie[1] says: "If we could assure ourselves that the disease is nothing more or less than a hypertrophy of the thyroid gland, it would seem that the most rational method of treatment is to reduce the enlarged gland to something like normal proportions by surgical means. But we can not ignore the part obviously played by the thymus in this disease. . . . Unfortunately, the operation is, even in the hands of most skilled surgeons, a dangerous one, and the risks are greatest in the class of cases which respond least to medical treatment."

Partial thyroidectomy does not always cure, perhaps because not enough of the gland is taken away. Kocher advocates removing three-quarters or more of the gland and the ligation of three arteries. Ligation of the thyroid arteries is as difficult as thyroidectomy, but less likely to cure and less dangerous. Curtis recommends it as a preliminary operation to partial thyroidectomy and as a palliative operation. Schwyzer, of St. Paul, reports four cases of well-marked exophthalmic goiter cured by ligation of the thyroid arteries.

B. Farquhar Curtis[2] is still a mild advocate of sympathectomy, but latterly he has been practicing thyroidectomy, and in one case did both operations with good results. Jaboulay's operation of exothyropexy is now never practiced, and in fact Jaboulay himself gave it up for section of the cervical sympathetic. As many deaths occur, strange to say, after sympathectomy as after thyroidectomy. It has been thought that deaths following operation in this disease are due to too much absorption of thyroid secretion, owing to the rough handling of the gland. But in the operation of sympathectomy there is no rough handling. It is well known that individuals with exophthalmic goiter stand operations badly and cases are reported of deaths occurring from so-called thyroidism in persons suffering from this disease after operation on distant parts, such as the pelvis or breast. The cause of death in these cases is almost as obscure as the cause of the disease itself, which may sometimes come on after severe fright or anxiety, and these causes in a well-developed case of exophthalmic goiter are well known to lead to an exacerbation of the symptoms.

THE CLASS OF CASES SUITABLE FOR OPERATION.

I am of the opinion that early operations are the safest and that the class of cases most likely to benefit are not the most severe ones, but those in which the gland is more enlarged on one side than another, in which, in fact, there is a more definite tumor formation, in which the gland is not excessively vascular, and in which the enlargement has preceded the symptoms of Graves' disease by months and perhaps years. These might be called cases of secondary or acquired goiter. Also in those early cases of enlarged thyroid with a mild form of Graves' disease, in which the gland is soft, vascular, and evenly enlarged throughout, here operations are usually most satisfactory, the after-results being decidedly good. The cases in which operation should be avoided are those of large vascular thyroids in which there are definite febrile exacerbations, excessive tachycardia, "with acute dilatation of the heart, precordial distress, gastric and abdominal pain, vomiting and diarrhea, sleeplessness, perspirations, sense of suffocation, great restlessness, edema of the feet—in fact, all the symptoms of toxemia due to thyroidism." (Thompson.)

---

[*] Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. British Med. Jour., Oct., 28, 1905.
2. Annals of Surgery, March, 1906.

It is singular that most physicians are against operative measures, or only consent in a half-hearted way to their occasional employment. It is perhaps because they hand over only the desperate cases to the surgeon, after all medical measures have proved futile. Hector MacKenzie[1] says: "On the whole, I consider the risk attending thyroidectomy too great to justify the operation save in exceptional circumstances." Eulenberg is opposed to operation, and Dr. George R. Murray[3] does not mention it at all. Nearly all the recent medical writers on exophthalmic goiter condemn surgical procedures as being too *dangerous and not always successful* (Collins, Robins, S. Smith).

MORTALITY FOLLOWING OPERATIONS.

A good deal depends on the kind of case operated on, and hence statistics are not of great value. Huntington[4] had one death in nine patients operated on. Ransohoff[5] reports six cases without any fatality. Curtis[6] reported fourteen cases of sympathectomy and thyroidectomy with four deaths, and mentions 136 patients operated on by surgeons, including Kocher, Schultz and Mayo, with 17 deaths. A large mortality, but no doubt in properly selected cases this would be much lower. Kocher's report of 59 patients operated on showed: 76 per cent., cured; 14 per cent., improved; 3.8 per cent., slightly improved; 6.7 per cent., died.

At the German Congress for Internal Medicine, held in April, Kocher reported having operated on 167 cases, with 9 deaths and 72 per cent. of cures. Friedheim, of Hamburg, out of 20 cases, had 15 patients cured and 5 improved.

The diseases having the symptoms complex of exophthalmic goiter, then, may be considered to be of two kinds: One in which the patient is extremely nervous and sleepless, has tachycardia, exophthalmos, pyrexia, tremor and edema of extremities, diarrhea and frequent sweatings, emaciation, and with a large, diffuse vascular thyroid usually not more enlarged on one side than the other, and which has not preceded the nervous symptoms, but has come on with the other symptoms indicative of this disease. This patient may have a dilated heart and perhaps endocarditis if the disease is of some standing; in such cases I should not now operate.

Patients in the second class, although ultimately not distinguishable from the former in symptoms, have had goiter for some years, which is more pronounced on one side than the other, and there is nervousness, excitability, difficult respiration, tachycardia, exophthalmos, tremors, sweatings and moderate loss of flesh. These patients are suitable for operation, and when the overgrowth of thyroid is removed the patient ultimately gets quite well. At first the pulse becomes quieter, nervousness is less, the patient increases in weight and generally improves, the exophthalmos, however, diminishes very slowly. Some of these patients operated on nine or ten years ago still remain quite well, and in this class of cases I have had no death following operation, though in some I have had some very alarming symptoms.

Huntington says: "We can not escape the conviction that general anesthesia is in a very large proportion of cases seriously at fault. There is no difference of opinion among operators as to the impropriety of general anesthesia in this relation and especially in advanced cases." Now, I have always used general anesthesia, latterly ether and chloroform mixed, and have had no bad results. In the two cases of death the patients perfectly recovered from the anesthesia and died after some time—eight hours in one case and two days in the other. The danger is always great in operation in a severe case of exophthalmic goiter, but not greater probably than the mortality would be if the patient were treated by medical means only. In selected cases this danger ought not to be very great, and with more extended experience in the cases proper for operation and if the operation is performed in the early stages, in the future I am sure the results will be much better.

REPORT OF CASES.

In the seventeen cases I report there were three deaths, all in desperate cases; nine patients were completely cured; three much improved; one relapsed and one was lost sight of, though improvement was noticed immediately after operation. Four cases were of the cystico-colloid variety; eleven colloid adenoma, and two pure hyperplasia without as much colloid as in the normal gland.

In two cases there was no exophthalmos, though the other symptoms were marked. In two the exophthalmos was slight, and in thirteen it was well marked. The patients' ages ranged from 14 to 53 years, and the average was 28.80. There were sixteen females and one male. All the patients demanded operation for the relief of their distressing symptoms, and in none was the operation insisted on. In every case the dangers were distinctly placed before the patient and her friends.

The following is a synopsis of the seventeen cases:

Case 1.—Mrs. H., aged 35, telegraph operator, always lived in Canada.

History.—Seven years ago she first noticed enlargement of the thyroid, which increased slowly until six months ago, when the gland began to grow rapidly and nervous symptoms were much increased.

Examination.—She entered the hospital for operation Dec. 16, 1894. At that time she had a pulse of 120, tremors, great excitability and loss of flesh with exophthalmos. She had been forced to give up her occupation on account of nervousness, and had also of late experienced some difficulty in breathing. There was enlargement of the thyroid, more on left side, and many hard nodules were felt in this lobe.

Treatment and Result.—The left half of the gland was removed with much benefit. Tumor after removal was found to consist of large vesicles filled with colloid and lined with flattened epithelium. The patient resumed her occupation, had little tachycardia and much diminished nervousness. Several years later I saw her again, when many of the old symptoms had returned, but she refused further surgical interference.

Case 2.—Miss L., aged 20, was sent to me by Dr. Cornell, of Brockville, Ontario.

History.—She has had enlargement of the thyroid for some years; both sides are enlarged and have the appearance of localized tumors. A short time after she noticed the increased size of the gland, nervous symptoms developed, tachycardia, tremors, etc. These symptoms increased on exertion and her pulse was almost uncountable. Then came exophthalmos with persistent pyrexia and on exertion great difficulty in breathing.

Examination.—When I saw her in 1896 she was a pale, anemic girl, very thin, with slight exophthalmos and a rapid pulse, 140 to 200. She was excessively nervous, had tremors, some fever and edema of the extremities, and was much emaciated. Both lobes of the gland were considerably enlarged. The enlargement was not of the soft, diffluent character usually seen in Graves' disease, but was hard and seemed to be a growth well defined on each side and the size of a small orange.

---

[3] Medico-Chirurgical Society Transactions, 1903, London, Eng

[4] Transactions of the American Surgical Association, 1905

[5] Lancet-Clinic, June, 1905.

[6] Annals of Surgery, March, 1905.

Operation.—Nov. 18, 1896, I enucleated from each lobe by separate incision a solid tumor, the size of a tangarine orange, full of colloid matter.

Result.—The patient rapidly recovered and was sent home in ten days. Two years after she was perfectly well and had no signs of exophthalmos or tachycardia; in fact, all the symptoms for which she consulted me had disappeared. I heard from her in March, 1906, and she still remains perfectly well and has no signs of goiter or Graves' disease. This case was one of my most successful.

Case 3.—Miss McC., aged 24, always lived in Montreal.

History and Examination.—She had a well-marked enlargement of the thyroid, more on the right side. It seemed to be a large solid tumor and commenced three years previously as a small nodule in the middle line of the neck and was supposed to be due to pressure of a brooch. Nervous symptoms appeared with the tumor. She was extremely nervous, had tachycardia (pulse 120), tremors, went upstairs with difficulty, sweated easily, had a slight cough; legs were edematous; she had lost much flesh and had exophthalmos.

Operation and Result.—Oct. 8, 1901, half the gland was removed and the patient made a good recovery. When last seen, three years after the operation, she was attending to her business as a milliner and was quite well, and though at times very nervous she had gained much flesh and the palpitation and other symptoms had disappeared. I have heard lately (April, 1906) that she still remains quite well. The gland was cystico-colloid with hyperplasia.

Case 4.—Bridget McC., aged 16, had enlarged thyroid for four years.

History and Examination.—The enlargement was general, but not very soft or vascular. She was extremely nervous, had tachycardia, pulse 120, tremors, loss of flesh and slight exophthalmos. Two sisters and a brother have enlarged thyroids.

Operation.—At operation the whole thyroid was removed, except a small portion over the trachea.

Result.—The patient rapidly recovered and lost in the course of a few months all nervous symptoms, and when last seen, four years later, was stout, healthy, with no nervous symptoms, and following the occupation of a domestic servant.

Case 5.—Jennie K., aged 24, since she was 15 years of age had enlargement of the thyroid.

History.—It commenced as a small round growth in the right lobe and had continued to grow ever since. For some years, owing to tachycardia and breathlessness, she had not been able to walk upstairs or to walk any distance on the level. For some years also she had had tremors and exophthalmos. The tumor was of large size, smooth, soft and not very vascular. The patient had become much thinner of late.

Operation.—Jan. 27, 1899, the tumor was enucleated. It was cystico-colloid. After operation there was a temperature of 104 F. and an uncountable pulse, with excessive nervousness. The discharges from the wound were sterile; on removing the packing and the evacuation of a large quantity of clear serum the symptoms subsided.

Result.—She was discharged from the hospital much improved, the tachycardia was less, she had no tremors and was altogether better. Six months later she wrote me that her heart had ceased to palpitate and that she was gaining flesh rapidly. In June, 1903, three and a half years after operation, I saw her again and she was looking very well; there was no trace of enlarged thyroid, but she still had slight exophthalmos and was occasionally nervous. I have heard since that she is married.

Case 6.—Miss S., aged 40, first noticed a small swelling on the left side of the neck ten years ago, which has been growing ever since.

Examination.—She had marked tachycardia, tremors, breathlessness on exertion, exophthalmos, and was emaciated and excessively nervous: pulse ranged from 108 to 110. The tumor was of considerable size and confined to the left lobe and isthmus.

Operation.—She was operated on Feb. 23, 1899.

Result.—For a time there was no improvement, but after six months there was less tremor and nervousness. Six years after I heard she was very well, but still has slight exophthalmos.

Case 7.—Miss M., aged 29.

History.—Two years ago her neck began to enlarge on the right side and the swelling gradually increased in size to that of a tangarine orange. She had tachycardia (pulse 120 to 130), tremors, palpitations, breathlessness and hacking cough.

Operation.—August, 1901, operation was uneventful; the right lobe was removed. The patient was much improved by operation and the pulse soon after came down to 90. I have been unable to trace this patient.

Case 8.—Alice H., aged 22, has had an enlarged thyroid all her life; up to three years ago she lived in Ireland.

History.—Latterly the gland has enlarged rapidly and nervous symptoms have been present for the past two years; the enlargement is more on the right side, smooth and vascular, pulsating. The pulse ranged from 100 to 120, the eyes were prominent; there were tremors, edema of legs, palpitation, insomnia, and latterly she has lost much weight.

Operation.—In May, 1904, the right half of the thyroid and isthmus were removed. Symptoms of thyroidism developed after operation; there were high temperature, great restlessness and uncountable pulse. These symptoms subsided at the end of a week and she was discharged at the end of two weeks.

Result.—Three months later I saw her and she had gained over 20 pounds in weight; the pulse was between 70 and 80, and she had resumed her occupation of nurse. Since then she has married and is now very well.

Case 9.—W. M. L., aged 44, had had an enlargement of the right lobe of the thyroid for some seven years.

History.—Seven months before consulting me nervous symptoms commenced to appear with attacks of dyspnea, dry cough, loss of weight, and "protrusion of the eyes." He also had attacks of palpitation and had tremors. Pulse ranged from 110 to 120.

Examination.—A marked enlargement of the right side of the thyroid was found which was soft, diffluent and pulsating. The trachea was displaced to the left. There was a good deal of exophthalmos, more on the right side, with tremors and a pulse of 112.

Operation.—Aug. 9, 1904, the right half of the thyroid and the isthmus were removed. After operation there was great restlessness, rapid pulse, and high temperature, with insomnia: eight days after there was much less nervousness and less tremor.

Result.—Six weeks after he left the hospital he reported himself much better.

Case 10.—Mrs. P., aged 34, was sent to me by Dr. Alguire, Cornwall, Ont.

History.—For the last twelve years she had noticed the thyroid enlarging; it came on soon after her marriage and especially grew during her last two pregnancies; her mother had enlarged thyroid and two of her sisters have it now, one of whom I have since seen has well-marked Graves' disease. The patient had great difficulty in breathing, but none in swallowing. She had tachycardia, pulse 134, exophthalmos, attacks of palpitation, and was very irritable. She had also lost flesh. She had a short, dry cough and of late her voice had altered.

Examination.—Paralysis of the left cord was found. The growth, which was a very large one, commenced on the right side and this is yet the largest part.

Operation.—Nov. 22, 1905, the whole gland was removed with the exception of a small part of the right lobe over the trachea. The trachea was found to be scabbard shaped. After operation, which was a difficult one, hoarseness and dysphagia followed, and then an attack of jaundice ensued, which had not completely disappeared when she left the hospital fourteen days later. With the jaundice her pulse fell to 76.

Result.—I heard from this patient a year after operation and she reported very slow recovery and still had some discomfort with dyspnea, but was gradually improving and had gained flesh. There were no signs of myxedema.

Case 11.—Mrs. H., aged 53, had had enlargement of the thyroid for some years.

History.—She had become so very nervous and excitable that she insisted on operation. She was a thin, excitable woman, with a pulse ranging from 125 to 135, tremors, insomnia, and slight exophthalmos. On each side there was a much enlarged, soft, diffluent and vascular gland; the arteries were very atheromatous.

Operation.—Oct. 19, 1901. Ether anesthesia was used. The patient, on coming to the operating table, had a pulse of 200. The whole gland was removed. The patient stood the operation well and recovered perfectly from the anesthesia, but that evening the pulse became uncountable, the temperature rose rapidly, she was very restless, and died the next morning, evidently from thyroidism.

Case 12.—Mrs. C., aged 30, had had a "full neck" ever since she can remember.

History.—Four months before consulting me, after the birth of her last child, the right lobe began to enlarge and severe nervous symptoms began to develop.

Examination.—When I first saw her I found a small, very excitable, emaciated woman with excessively prominent eyes, and with a pulse of from 140 to 150, and well marked tremors, she was also sleepless and had diarrhea and sweatings. Her husband said that at times she was quite maniacal. She had an enlarged neck, measuring 35 cm., the enlargement greater on the right side. The gland was soft, very vascular, diffluent and pulsating.

Treatment.—I first gave her potassium iodid in ten grain doses. This seemed to have the effect of hardening the gland and she was less nervous, but soon tired of it and refused to take any more. I then tried *x*-rays; six exposures caused diminution of the tumor from a circumference of 35 cm. to 32.5 cm., but there was no perceptible effect on the nervous symptoms. Operation was demanded, and, although I was not very eager to comply, I took her into hospital and kept her in bed for a week with an ice bag on the heart. I had much difficulty in keeping her in bed as she was at times violent and almost maniacal, and seemed in great fear. The left cord was partially paralyzed.

Operation.—Jan. 25, 1906, she was operated on. There was much difficulty in giving the anesthetic, but when she became unconscious she was quiet and her pulse fell from 200 to 140. An ether and chloroform mixture was the anesthetic. The operation was without incident, the right lobe and isthmus were removed and the patient recovered completely from the anesthetic and recognized her friends.

Result.—Towards evening she became excited, the pulse uncountable, respiration difficult, and the temperature rose to 104 F. She became quite maniacal and then subsided into a stupor and died during the night. Examination of the removed lobe showed some hyperplasia of the gland and it was found that the parathyroid had also been removed, and on examination was found to be quite normal.

Case 13.—Miss D., aged 23, for some years had had an enlargement of the thyroid which was soft and vascular.

History.—She has had frequent attacks of palpitation, tachycardia and excessive nervousness, which made her life miserable. She could do nothing and was getting worse. She had lost flesh. There was no exophthalmos and no tremors, although Graefe's sign was present.

Operation.—Dec. 2, 1898, the right half of the thyroid and the isthmus were removed. She had some symptoms of thyroidism after operation and perspired most profusely for some days.

Result.—At first there was no improvement but a year afterwards the patient said she was better than she had been for years and that the left half of the gland had diminished considerably. It was a colloid goiter with hyperplasia.

Case 14.—M. McL., aged 19,

History.—For two years she had noticed enlargement of the neck and latterly had been very nervous, breathless, and had suffered from palpitation; the eyes also had become prominent.

Examination.—A moderate enlargement of the thyroid was seen more on the left side; it was soft and vascular. The patient was excessively nervous, had a moderate degree of exophthalmos, and some breathlessness; pulse ranged 110 to 120.

Operation.—June 17, 1895, the left lobe and isthmus were removed. The left lobe contained an adenomatous growth.

Result.—The patient recovered well from the operation and left the hospital on the tenth day. She was much improved, pulse had come down below 100, and the nervousness was less. I heard of her some months after and she reported that she was quite well, had no tachycardia, and was much less nervous, but the exophthalmos still persisted.

[These notes were taken from my private operation book and from a short account on the back of a photograph. The complete hospital case record had been borrowed and never returned, and could not be found.]

These fourteen patients are all on whom I have operated with sufficient severity of symptoms to call the condition Graves' disease. Many patients have been operated on who had difficulty of breathing, rapid pulse, and some with a considerable degree of nervousness, but, although there were some of the symptoms of Graves' disease, yet they were not severe enough to be classed as exophthalmic goiter. Of the 14 patients operated on twelve patients have been benefited by operation, one has relapsed and one has been lost sight of; the deaths have been two, both in very advanced cases. The next three cases I mention shortly are patients who have been operated on by colleagues in the hospital, who have kindly consented to allow me to make use of them.

Case 15.—C. G., aged 19, had had gradual enlargement of the thyroid for five years.

History.—She had lost weight, was excessively nervous, had frequent attacks of palpitation, pulse 140, tremors, and marked exophthalmos.

Examination.—She had enlargement of the heart, a systolic murmur at the apex, and an accentuated second pulmonic sound. The left side of the thyroid was larger than the right, and the whole gland was much enlarged, soft and pulsating, except on the right side where the enlargement was apparently cystic.

Operation.—January, 1897, the patient was operated on; she lost considerable blood and never recovered consciousness after the operation. The autopsy showed a greatly enlarged thymus and excessive enlargement of both suprarenals.

Case 16.—E. B., aged 14, had been excessively nervous for two years and had had profuse sweats.

History.—For six months the voice had been affected and she had had difficulty in swallowing and excessive restlessness and periods of mental depression. Although there has been slight enlargement of the thyroid for two years, it had increased greatly in size during the past three months. Pulse ranged from 120 to 130. Tremors were well marked and there was great dyspnea on exertion; she had marked exophthalmos.

Operation.—The right half of the thyroid was removed in November, 1904, under local anesthesia, and the patient did well.

Result.—When last heard of some months after operation she had improved greatly and was much less nervous, and the pulse was 80 to 100.

Case 17.—Mrs. G., aged 33, had noticed increasing enlargement of the thyroid for the past sixteen months, and especially during the last three months.

Examination.—She had well-marked exophthalmos, tachycardia (pulse 120), tremors, great nervousness and excitability. Both lobes of the thyroid were moderately enlarged, the right being more prominent; the gland was firm, elastic, not very vascular, and of uniform consistence.

Operation.—In February, 1905, excision of the right lobe was performed under cocain and ether and the patient rapidly recovered, going out in eight days, with much better pulse (under 100), and not nearly so nervous. In this case there was very little colloid, there was hyperplasia of the gland with very small alveoli.

In most cases hyperplasia of the gland was found, in some the colloid matter was much more abundant than in others; in some the vesicles were smaller, and in others there was the folding in of the epithelium as described by MacCallum. I have not given the description of the microscopic sections, but have been content to make a diagnosis from the clinical symptoms which are complex. I do not yet believe that we can always tell by microscopic examination whether or not the condition is one of Graves' disease, for in many cases in which there were no symptoms, such as tachycardia, nervousness, etc., well-marked hyperplasia of the gland was found.

This being a surgical paper, I have not mentioned the medical treatment. The cases I have related had all been treated medically before being sent to me. Of the serum treatment I have no experience nor have I seen cases treated in this way, though I have heard that good results have been obtained in many instances.

DISCUSSION.

ON PAPERS OF DRS. ROGERS, BEEBE AND SHEPHERD.

Dr. L. W. Bacon, Jr., New Haven, Conn., is convinced that a little more careful analysis of the symptoms presented would enable the surgeon to elect among several possible surgical procedures the one best suited for the particular patient. In cases of what may be called the "sympathetic type," for instance, where on account of such symptoms as a unilateral exophthalmos it is difficult to ascribe the symptoms to hyperthyroidism or to any other form of a general intoxication, it is very reasonable to consider the possible advantages of the so-called sympathectomy over thyroidectomy. There is another class of cases in which the irregularity of the symptoms, and the extreme predominance of one symptom over another indicates perversion rather than mere excess of thyroid function; in these cases thyroidectomy is little likely to do good. In some of these cases there is a concomitant localized myxedema, and here Dr. Bacon regards thyroidectomy as distinctly contraindicated. When, as in some cases, the administration of thyroid extract is followed by an amelioration of the symptoms, this is an indication of perverted, rather than of excessive thyroid function, and in such cases thyroidectomy should be recommended with great caution.

The general conclusion Dr. Bacon has reached in the matter is that the more typical the case of exophthalmic goiter the more clear is the indication for thyroidectomy. Atypical cases may demand some other operation, or may, perhaps, be best treated by non-surgical means. Care should always be observed in advising any kind of an operation in these cases, and if on testing the case with thyroid extract it is found that this produces an amelioration of the symptoms, and likewise, in that certain small percentage of cases where the disease apparently is not due to a distinct intoxication, abstension from thyroidectomy should be the rule. For, however logical a means this operation may offer for the reduction of an excessive secretion, for the correction of a function perverted in quality its logic is less evident, and for the cure of those patients who may present many of the symptoms of exophthalmic goiter, but whose troubles are dependent on organic changes in the central nervous system, thyroidectomy is probably worse than useless. The line of progress in the surgical treatment of exophthalmic goiter will lie in the more careful analysis of the cases.

Dr. H. M. S. Dawbarn, New York, believes that in view of the brilliant results obtained by Drs. Rogers and Beebe, surgeons are not justified in attempting any surgical intervention without first trying the serum treatment. He has used the ligation method instead of partial thyroidectomy in four instances, with the greatest benefit. The object of the removal of a portion of the thyroid is to get rid of the excess of thyroidin thrown out in excess by the gland. If the same results can be accomplished by shrinkage of the thyroid gland, simply through tying off all the named thyroid arteries, two great benefits are attained. First, there is avoided the risk of removing a part of the gland, with its occasional consequent rise of temperature and sudden death; the ligation method being, on the other hand, practically devoid of mortality. Second, since the majority of these cases occur in women, the resulting appearance is important to consider. The removal of the thyroid on one side leaves a depression, whereas there continues a bulging on the other side, there thus being a lack of symmetry and never a very grateful patient. By the method Dr. Dawbarn is advocating, there is nothing worse than a delicate linear scar running down the neck on each side. Inasmuch as there is no case on record in which ligation of both the superior and inferior thyroid arteries, and also any other artery that may be found going to the gland, has been followed by gangrene of the gland, there can be no objection to tying all of these vessels. There will remain anomalous vessels enough for nourishment. Dr. Dawbarn ties them on both sides at the same sitting and, in his experience, they have been so very large that they can be found without the least difficulty. The resulting deformity is almost *nil*. That being the case, it seems that inasmuch as in each instance there has been very rapid and permanent shrinkage of the thyroid, and since it is so very safe a plan and does not necessitate handling of the gland, it is the thing to try rather than any more severe and mutilating method.

Dr. A. J. Ochsner, Chicago, said that there are four distinct dangers connected with anesthesia in operation for exophthalmic goiter. 1. There is the danger of the anesthetic itself. These patients, unless anesthetized with great care, are very liable to get into trouble. If the anesthetist is at all careless the patient may be so thoroughly asleep that it will be difficult or impossible to arouse him. 2. There is the danger of producing a toxemia incident to the possibility of violently handling the enlarged gland while the patient is asleep. He can not at that time object to any violent treatment, and it is possible to squeeze the thyroid juices into the circulation. The result is high temperature and sometimes a fatal issue. 3. There is the danger of injuring the recurrent laryngeal nerve, which does not have to be reckoned with when the patient is awake, because the moment it is picked up the patient becomes hoarse. 4. And, finally, there is the danger of infection through the breath of the patient, the patient breathing and infecting his own thyroid through his breath.

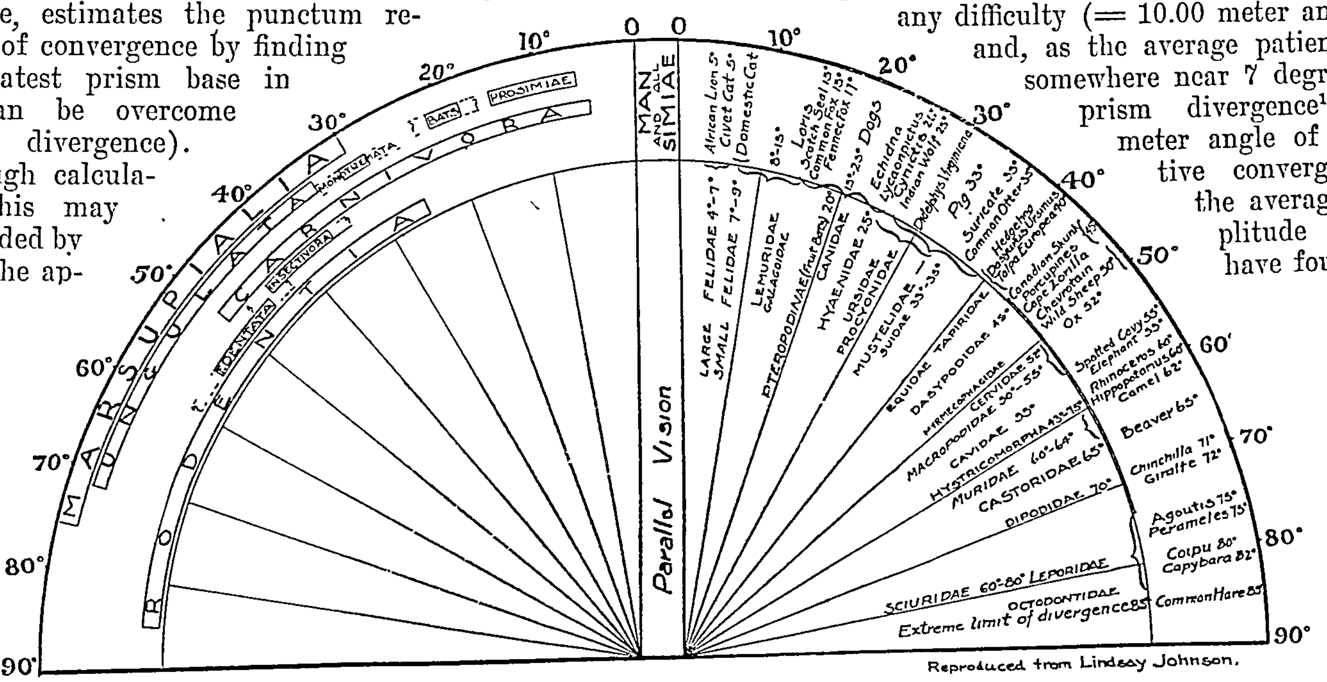
Following a suggestion made by Dr. Crile some years ago Dr. Ochsner avoids all these troubles by thoroughly anesthetizing the patient with ether while he is in the horizontal position, then covering the mouth and nose with about ten thicknesses of aseptic gauze, then elevating the head of the patient by placing him in the inverted Trendelenburg position and utilizing the resulting anemia, in place of the anesthetic, for the remainder of the operation. It is always possible to complete the operation without giving any more of the anesthetic, and by the time that the recurrent laryngeal nerve is reached in the course of the operation the patient will be partly out of the anesthesia and able to speak so that he can warn the operator of that danger, which can also be avoided in that way. In fact, so can all the dangers that depend on the anesthetic. and there is the advantage of having the patient quiet so that the operation can be completed very rapidly.

The operation which Dr. Ochsner has performed on many patients has been the following: He removes the middle and larger lobe and ligates the inferior thyroid artery and vein on both sides, which reduces the size of the thyroid on the opposite side, so that no deformity results. One case was operated on as long as fourteen years ago. The patient is still in excellent condition. Dr. Oschner thinks that the serum treatment is still in the experimental stage. If, however, it proves to be useful, then the operative treatment must be reserved for those cases in which the serum proves useless. At present, the operation, if performed in this way, is certainly a relatively safe and satisfactory procedure.

Dr. J. Shelton Horsley, Richmond, Va., stated that the pathology of exophthalmic goiter seems to be accepted as being due to the thyroid gland itself and not to a disease of the nervous system. This is proved by several things. First, by the fact that operations attacking the thyroid itself seem to be productive of the best results. Second, by the magnificent work of Drs. Rogers and Beebe who have elaborated this serum which acts only on the thyroid gland and employed it

In 17 persons who had parallel ocular axes during life, he found divergence postmortem. He concludes, therefore, that even in civilized man there is a tendency toward divergence which is overcome by fixed innervation. This fixed innervation is what Maddox[6] calls tonic or initial convergence.[7]

In Figure 3 he represents convergence as composed of three elements: the initial or tonic element, the accommodative element, and the reflex element, although exception might be taken to the latter element. It is simpler to resolve convergence into two elements, namely, initial or tonic convergence (the phylogenetic convergence of Pohlmann) and accommodative convergence (Fig. 4). This, however, is the academic phase of the matter. Landolt approaches the subject of convergence in a much more practical fashion and shows how deeply he feels that it is a problem sufficiently often encountered in the flesh to merit our earnest study. He prefers to measure the amplitude of convergence,[8] because of his conviction that that is the key to many otherwise puzzling anomalies of convergence. He, therefore, estimates the punctum remotum of convergence by finding the greatest prism base in that can be overcome (prism divergence). For rough calculation, this may be divided by 7 and the approximate degree of negative convergence (or divergence) in meter angles thus obtained. For instance, if prism divergence be 7, there is one meter angle of negative convergence. For estimating the postive convergence, prisms are not of sufficient value, because of the varying quality of convergence so estimated. His preference is for the ophthalmodynamometer (of his own contrivance). For this purpose I have for three years employed what seems to me a much simpler device. Using the one-candle electric light of the DeZeng electric ophthalmoscope, I half-darken the room and then, starting at 15 inches from the face, have the patient watch the light attentively as it is carried in the median line toward the eyes. At about 10 inches from the eyes the corneal images from the electric light become plainly visible to the surgeon, and it is then easy to watch these images as the light is carried toward the root of the patient's nose until one or the other of the corneal images comes to a standstill. This is the near point of convergence, and one can readily calculate the number of meter angles of positive convergence at the patient's disposal. For instance, if one of the corneal images comes to a standstill at 4 inches, there are 10 meter angles of positive convergence; if at 5 inches, there are 8 meter angles; if at 3 inches, there are 13 meter angles. The test as thus applied is objective, while Landolt's procedure is subjective and open to all the disadvantages of every subjective test. This test is applied in about 5 seconds, as a rule.[9] The amplitude of convergence is, hence, the sum of the positive and negative convergence. Thus if there be 9 degrees of prism divergence (1.28 meter angles of negative convergence), and the corneal images come to a standstill at 4 inches (10 meter angles of positive convergence), the total amplitude = 1.28 + 10.00 = 11.28 meter angles of convergence.



Reproduced from Lindsay Johnson.

Diagram showing the divergence of the optical axes in the Mammalia

The Natural Orders are represented on the left-hand quadrant, the Families, Genera and Species on the right.

Figure 2.

By the above test I have found that the average patient converges to 4 inches (10 centimeters) without any difficulty (= 10.00 meter angles), and, as the average patient has somewhere near 7 degrees of prism divergence[10] (1 meter angle of negative convergence), the average amplitude as I have found it in my office is about 11 meter angles. Landolt has found 10.50 as his average. He has further shown[11] that of the total 10.50 to 11.00 meter angles the reserve ought to be about twice as great as the convergence required by the work, and that is about what occurs in the average individual. Most work is done at about 13 inches from the eyes, that is, it requires about 3 meter angles of convergence, and this leaves from 6 to 7 meter angles of reserve, or a trifle more than twice as much as the ordinary amount used. If there be much departure from this relation, there is almost sure to be some discomfort in the use of the eyes at the occupation distance. As these two tests—estimation of the prism divergence and estimation of the convergence near point—can be accurately executed in from 3 to 4 minutes, there can be little excuse for omitting them in any patient with exophoria who has not been made comfortable by the use of a nonprismatic correction only. Indeed, I believe it wise and valuable to make them in all cases of exophoria before dismissing the patients to try the effect of their proper correction.

---

[6] "The Clinical Use of Prism," Bristol, 1897.

[7] Hansen Grut aptly compares it to the tonic element in the accommodation of a hypermetrope.

[8] Norris and Oliver: "System of Diseases of the Eye," vol iv.

[9] It is also worth while in pursuing this test to approach the light from the right and left side as suggested by Duane.

[10] In 60 consecutive cases of exophoria it was found to be 7.5 degrees.

[11] Arch. Opht., March, 1886.

ANALYSIS OF FOUR HUNDRED AND FORTY-ONE CASES OF EXOPHORIA.

In the analysis of the following 441 cases, these facts are to be borne in mind:

1. All of the cases occurred in private practice.

2. Only cases presenting stereoscopic vision have been included in the analysis (hence exotropia is excluded).

3. Proper correcting lenses were prescribed by me and tried thoroughly before proceeding to the treatment of the exophoria as an intrinsic condition, or the patients had been recently refracted by a trustworthy ophthalmologist.

4. No selection of cases for these statistics has been made. They have been taken consecutively and include all the cases of exophoria I have seen in private practice.

5. Refraction with a mydriatic was done in practically every patient under 45 years of age when I did the refraction myself. Over that age the refraction was done without a mydriatic.

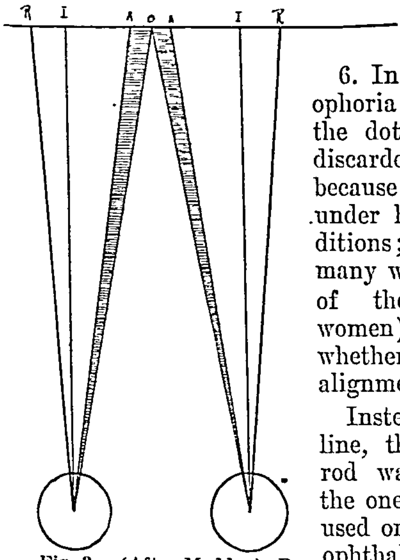


Fig. 3.—(After Maddox). R, Punctum remotum. R. I., initial convergence. I A, accommodative convergence. A O, reflex convergence.

6. In testing for exophoria at the near point, the dot and line test was discarded entirely, first, because it places the eyes under highly artificial conditions; second, because many women (and the bulk of these patients were women) can not tell whether objects are in alignment or not.

Instead of the dot and line, the Maddox multiple rod was used, along with the one-candle electric lamp used on the DeZeng electric ophthalmoscope (described above in connection with the convergence near-point test). This little light the patient holds at the ordinary occupation distance (about 13 inches), and by means of the multiple Maddox rod great delicacy is secured, one-fourth of a degree of error being easily thus revealed. In presbyopes the reading correction should be used when this test is applied or the observer will be led into error. Schild's, Baer's or any other development of the simple apparatus I have described may be used, but for six years I have found the simple one-candle electric light and the Maddox rod satisfactory in every way.

7. In testing prism divergence (abduction) and prism convergence (adduction) separate prisms were used, the prism divergence being always estimated first. In obscure cases the following 7 points were considered essential to a proper study of the case: (a) The exophoria for infinity (or distance); determined by both the cover test and the multiple Maddox rod.[12] (b) The hyperphoria for infinity. (c) The prism divergence (abduction). (d) The prism convergence (adduction). (e) The exophoria for 13 inches (33 centimeters). (f) The hyperphoria for 13 inches (33 centimeters). (g) The convergence near point.

These seven maneuvers may be accurately gone through in from 6 to 8 minutes and are well worth systematic employment in every obscure case of exophoria in which symptoms persist in spite of the best refraction.

Age.—The frequency of exophoria in the various decades of life is given in Table 1, which shows plainly the influence of age in its production. The occurrence of less than one-tenth of all the cases before the twentieth year is a significant fact. Weiss[13] calls attention to the outward swing of the orbits (and along with them their long axes) after puberty. Duane[14] notes those cases in which divergence has developed as a result of the gradual divergence of the orbits taking place during the period of growth in children and youth. "This divergence, by altering the angle of insertion of the tendons and the amount of tendon in contact with the eyeball (contact arc), increases very greatly the power of the externus and diminishes that of the internus, and in itself is quite sufficient to account for the development of divergent strabismus." If it will give rise to so pronounced a deviation as divergent strabismus, it may well be asked: How much more easily may it give rise to a latent deviation or exophoria?

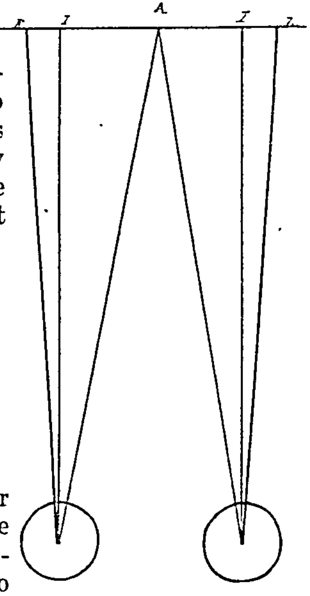


Fig. 4.—R., punctum remotum. R. I., initial convergence (tonic convergence. I. A., accommodative convergence.

TABLE 1.

Decade.	No. of times found.
Under 10	6
11 to 20	34
21 to 30	90
31 to 40	106
41 to 50	124
51 to 60	59
61 to 70	14
Over 70	6

Sex.—Of the whole number here reported 161 patients were males and 280 females, or a proportion of 6 to 11. That is to say, there were almost twice as many women as men presenting exophoria. These figures accord very well with those furnished by analyses of large numbers of refraction cases (say 1,000 to 2,000)[15] which show that about twice as many women as men apply for refraction in private practice. Women's nervous systems are admittedly less resistant than men's, and it is also probable that women employ their eyes more at the occupation distance than do men. Neurasthenia, too, for many reasons, is much more likely to occur in women than in men. Yet examination of 33 cases of exophoria of the neurasthenic type occuring in this whole series were practically equally divided between the two sexes, 15 of the patients being men and 18 women. It is altogether probable that if the figures could be so extended as to include an equal number of males and females exophoria would be found to occur as often in 1,000 men as in 1,000 women.

---

[12] The cover test seems to me one of the most valuable tests at the ophthalmologist's service if applied as follows: The patient is made to survey some small object on a homogeneous background (like a blank wall or a small point of light looked at in a mirror across the room; by reflecting the light in this way a good distance can be obtained for the test). With the patient's gaze fixed on the fixation object, a card is carried in front of the eyes from right to left, covering first one eye and then the other. This maneuver should be repeated from 10 to 15 times to break in *on* the fusion impulse as much as possible, great care being taken that at no time, as the card is being moved, both eyes get a simultaneous view of the object else the point of the test is lost. By attentive observation, the eyes will be seen to give a slight jump in or outward as they are alternately uncovered, unless there be lateral balance or less than 1 degree of error. This test is wholly an objective one, and its objectivity and accuracy give it great value. If it is desired to make the test subjective (by asking the patient after a few movements with the card whether the fixation object appears to jump from side to side as the card is shifted), it is very readily done. So carried out, it becomes the parallax test, and is of the greatest delicacy, one-fourth of a degree of deviation being easily possible of detection in intelligent patients.

[13] Knapp's Arch., vol. xxv.

[14] "Motor Anomalies of the Eye."

[15] See Risley and Thorington, Jackson, Gould, Ellis and others.

TABLE 2.

Students	50	Farmers	3
Accountants	20	Merchants	11
Desk workers	55	Needleworkers	40
Stenographers	15	Salespeople	7
Professional people	92	Storekeepers	8
Outdoor workers	7	Housewives	120
Laborers	3		
Mechanics	10	Total	441

Occupation.—Table 2 has to do with the occupation of the 441 exophorics. These workers may be arranged in three groups as follows:

1. Those who use their eyes at the occupation distance most of the day.

2. Those who use their eyes little or not at all at the occupation distance.

3. Those whose days are fairly well divided between general work and near work, e. g., housewives.

Thus the students, accountants, desk workers, stenographers, professional people, needle workers (including loomworkers) show a total of 272; the outdoor workers, laborers, mechanics, farmers, merchants, collectors, salesmen, shopkeepers, etc., show a total of 49, while the housewives number 120. In other words, practically two-thirds of the whole number of exophorics were what might be called near workers. I am inclined to attach some importance to these particular figures; for if one be engaged more or less all day in near work, even though they wear a perfect correction, they are very likely to have some symptoms of discomfort at their work if they present exophoria for infinity; in my experience exophoria at infinity generally means deficiency either in the amount of convergence or in the faculty of using it.

TABLE 3.

Degrees of Exophoria.	Times found.	Degrees of Exophoria.	Times found.
1	95	12	4
2	145	13	1
3	69	14	1
4	29	15	7
5	14	16	1
6	15	17	..
7	9	18	3
8	9	19	..
9	2	20	1
10	12	25	1
11	1		

The degree of exophoria occurring in these 441 cases is shown in Table 3. As in hypermetropia, so in exophoria the smaller degrees of error predominate; the parallel is further borne out by the fact that, as a rule, the smaller deviations carry with them the most marked symptoms, and for the same reason, that they are overcome all day long. Of the whole series of 441 cases, 309, or 70 per cent., were of 3 degrees and under. Only 32 times, or in 41 per cent., did the deviation amount to 10 degrees or more. In 7 cases it reached 15 degrees, in 3 cases 18 degrees, in one case 20 degrees, and in one other 25 degrees. Naturally, these last few were practically instances of suppressed (or overcome) divergent strabismus (anatomic exophoria), which will be alluded to later.

TABLE 4.

In 441 cases of exophoria there was associated:

H + ah in	176 cases.	
Ah in	34 cases.	
H in	46 cases	
H + Ah (one eye) H or Ah (other eye	46 cases.	
Ahm in	17 cases.	
Total for H + Ah and allied conditions	319	319
There was associated:		
M + Am in	48 cases.	
Am in	16 cases.	
M in	3 cases.	
M + Am (one eye) M or Am (other eye)	7 cases.	
Amh in	16 cases.	
Total for M + Am and allied conditions	90	90
There was associated antimetropia:		
(So-called anisometropia) in	32 cases.	32
Total		441

Refractive Status.—We next come to the relation that exophoria bears to the various states of refraction as set forth in Table 4. Despite the fact that exophoria has been looked on by many authorities as a passive condition, it will be seen by reference to the table under consideration that this belief is no longer tenable. That a certain small percentage does represent a passive or under-action phenomenon (in reality an accommodative exophoria) is a well-established fact. But Table 4 shows at a glance that in 441 cases this anomaly was associated with hypermetropia or its allied refractive conditions (H + ah-ah-ahm + H) 313 times, or in 72 per cent. of the cases. And inasmuch as all hypermetropic conditions call for excessive accommodation (hence associated excessive convergence impulse); we may be sure that a certain portion of latent exophoria is masked in such cases by the attempt on the part of the patient to overcome the hypermetropia. Herein lies the unwisdom of anything like a full correction of the spherical element in the hypermetropia associated with exophoria.

Myopia and its allied condition (Am, M + Am, Amh) were present in 89 of the 433 cases (20.5 per cent.) and it is probable that a certain proportion of these were accommodative exophorias.

There remain to be considered 31 (or 7.5 per cent.) cases of antimetropia (the so-called anisometropia) in which it will be later shown that the average degree of exophoria was higher than in any other refractive condition.

Subdivisions of Exophoria.—The term exophoria, while of great clinical convenience, is not altogether sufficient to the purpose for which it is employed, in that it gives no clew to whether convergence be deficient, divergence excessive, or the two conditions coexistent. So that, for purposes of statistical study and better understanding of the cases, it becomes necessary further to subdivide a proportion of the series herein offered into:

1. Exophoria with normal divergence and deficient convergence.

2. Exophoria with divergence excess.

3. Exophoria with convergence and divergence both deficient.

These may be, for greater convenience, put down as: (a) Asthenic exophoria (Savage), true convergence insufficiency; (b) sthenic exophoria (Savage), anatomic exophoria; (c) neurasthenic exophoria.

In the series of cases here offered there were 200 in which there was only partial or no relief to the patients' symptoms afforded by correcting lenses alone. Of this latter number there were 121 in which the prism convergence and the prism divergence were estimated in the further study of the cases. Arranging these 121 according as they showed subnormal, normal or excessive divergence, we find the following:

Thirty-five times, divergence and convergence were subnormal; 23 times, divergence was normal and convergence was subnormal; 63 times, divergence was excessive and convergence subnormal. Or to tabulate them more in detail:

TABLE 5.

Conditions.	No. of Times Found.	Average Exophoria for Infinity.	Average Prism Convergence.	Average Prism Divergence.
Neurasthenic exophoria	35	1.80°	9°	5.5°
Asthenic exophoria. . .	23	2.25°	11°	7°
Sthenic exophoria.	63	3.00°	14°	8°

This table shows that over 60 of the class so studied proved to be sthenic or intrinsic exophorias (divergence excess of Duane), a proportion that, it is thought, will hold for the whole series. It further shows that the average exophoria increases as the prism divergence increases (as would naturally be expected). Finally, it sustains Seabrook's claim that exophoria for infinity almost invariably means subnormal convergence, whether the exophoria is asthenic, sthenic or neurasthenic. The influence of hyperphoria in reducing both prism divergence and prism convergence is well known, and no case of exophoria should be put down as neurasthenic until hyperphoria of three-quarters of a degree or more has been excluded. Table 6 was drawn up for the purpose of comparing at every point 6 cases each of neurasthenic, asthenic and sthenic exophoria.

Several interesting practical points are brought out by this table. It is commonly accepted that from 10.50 to 11.00 meter angles of convergence amplitude are sufficient for comfortable work at the near point; and yet in Cases 5 and 6 of Group 1 in Table 6 there was exophoria of 8 degrees for the reading distance in both cases, with a convergence amplitude in one case of 12.00 m.a. and in the other 13.85 m.a. In Cases 1 and 4 of Group 2, there was exophoria of 12 and 10 degrees, respectively for the reading distance, with a convergence amplitude of 21.00 m.a. (!) in each case. It will be readily seen that, while all 4 of these patients possessed convergence amplitude much in excess of what is generally considered quite sufficient, they had all learned the trick of using the power that was potential in their adducting muscles all the time.

Contrast with these Patient 5 of Group 2, who presented an exophoria of 2 degrees for both distance and near work, in spite of the fact that her convergence amplitude was but 8.50 m.a. Here was a patient who, though her convergence amplitude was not all that it should be, yet held her adductors up to their work almost perfectly, for she was almost without symptoms. Too, she was one of those individuals who have themselves well in hand and accomplish all things well; moreover, her physical condition was superb.

TABLE 6.

		Exophoria for distance.	Exophoria at 13 inches.	Difference between infinity and near exophoria.	Prism convergence.	Prism divergence.	Convergence near point.	Amplitude of convergence in meter angles.
	Group 1:*							
Neurasthenic.	1	2	6	4	7	6	3	13.85
	2	1	5	4	8	6	3	13.85
	3	1	5	4	8	6	3	13.85
	4	1	2	1	10	6	3	13.85
	5	1	8	7	6	5	3½	12.00
	6	1	8	7	10	6	3	13.85
	Group 2:†							
Asthenic.	1	2	12	10	10	7	2	21.00
	2	1	5	4	12	7	3½	12.50
	3	3	12	9	10	7	4½	10.00
	4	3	10	7	11	7	2	21.00
	5	2	2	0	12	7	5½	8.50
	6	1	6	5	14	7	4½	10.00
	Group 3:**							
Sthenic.	1	2	7	5	18	10	3½	13.00
	2	12	19	7	20	14	5	10.00
	3	2	2	0	19	8	3	14.15
	4	8	15	7	8	9	4	11.30
	5	5	18	13	18	12	4	11.70
	6	4	16	12	11	9	4	11.30

* Cases with subnormal prism divergence.
† Cases with normal prism divergence (= 7 degrees).
** Cases with excessive prism divergence.

The following 5 cases illustrate well the value of estimating both the exophoria for the near point and the amplitude of convergence—for if the exophoria for the near point be much greater than that for infinity and the convergence amplitude be normal—the necessity for convergence training, with prisms or otherwise, is apparent. Such patients need to be shown how to use a faculty they already possess. On the other hand, when exophoria for the distance shows no increase when estimated for the near point, though the convergence amplitude be normal or even above normal, not so much need be expected from further training of a faculty the patient already knows how to use and is probably drawing on heavily.

A word as to the proportional relation between prism divergence and prism convergence. In 1895, Risley[16] stated his belief that muscular asthenopia frequently proceeded from disturbance between the relation of adduction to abduction which should be as 3 to 1. This was based on results obtained with the rotary prism. Some time earlier Noyes had spoken of 5 or 6 to 1 as the normal relation. Following Risley, Bannister[17] went over 100 U. S. Army recruits and, using separate prisms from the trial case, came to the conclusion that "there exists in healthy eyes no positive definite relation between prism convergence and prism divergence for distance, and that it is not correct to claim that such eyes should, without practice with prisms, show at 6 meters a ratio between these functions of 3 to 1 or 6 to 1 in favor of convergence, not permitting abduction to fall below 6."

Naturally, much depends on the way in which the tests are applied. Convergence is a variable elastic quantity. Prism divergence is a fairly constant one. It would seem wise, therefore, first to test the prism divergence, gently leading the patient along by having him close his eyes from time to time and open them suddenly, with the purpose of arriving at his greatest possible prism divergence, then closing and resting the eyes for a few minutes before estimating the prism convergence. This was the method employed in the subjoined series of 121 exophorics in whom it was found that: prism divergence was in excess 12 times; prism divergence and prism convergence were equal 10 times; the relation of prism convergence to prism divergence was as 1½ to 1, 30 times; as 2 to 1, 41 times; as 2½ to 1, 19 times; as 3 to 1, 7 times; as 4 to 1, twice.

Bannister's figures appear to be very good ones to work from, as they are based on methods largely in use in ophthalmic offices the country over. As compared with them, it will be seen that in exophoria the relation of prism divergence and prism convergence varies in so confusing a manner as to attach little value to their relative behavior. Estimation of the near point exophoria and convergence near point are more essential. Necessarily the amount of prism convergence in a case of exophoria is always of interest; for instance, if a patient's distance vision begins to blur when a 6, 8 or 10 degree prism is placed base out before the eyes, the inference that their prism convergence is defective and that they have not learned to dissociate their accommodation and convergence is entirely justifiable.

---

[16] Univ. Med. Mag., 1895.
[17] Annals of Ophth., 1898.

In Table 7 the average exophoria in the various states of refraction is shown and we here find food for thought:

TABLE 7.

		Average exophoria.
H + Ah and allied conditions.....	319 cases.	2.5 degrees.
M + Am and allied conditions....	90 cases.	3 degrees.
Ahm	17 cases.	3 degrees.
Amh	17 cases.	4 degrees.
Antimetropia	31 cases.	5 degrees.

In H + Ah as it commonly occurs, stereoscopic vision is usually very little, if any, hindered, and the average exophoria associated with it is but 2.5 degrees. In antimetropia (the so-called anisometropia) where dioptric inequality between the two eyes ofttimes interposes a weighty hindrance to smooth, easy stereoscopic vision, the average exophoria rises to 5 degrees. In other words, when there is sufficient obstacle to the performance of *stereoscopic vision, the eyes tend toward the position of* anatomic rest, which is a heritage to us from our forebears for countless generations. Exophoria thus reveals itself as a reversion to a lower type and may justifiably be considered an atavistic phenomenon, as claimed by Lindsay Johnson, Pohlmann, LeConte, Jackson and others. The data here given lend firm statistical support to that contention.

As to symptoms, 200 of the 441 cases here catalogued presented symptoms of muscular asthenopia persisting after careful correction of their refraction. Of these two hundred, 173 exhibited headache, the frontal type predominating in 102, the occipital in 60, the temporal in 11; while 140 gave testimony as to more or less vertigo, especially after near work. Ocular fatigue and ache were present in 153, ocular tenderness in 98, conjunctival irritation was complained of in 121, low-grade photophobia in 130. Nausea seemed fairly well related to the exophoria 72 times; and drowsiness after near work was almost invariable, as was also picture-gallery and after-shopping fatigue. Gastric reflexes seemed etiologically related to the exophoria in 23 cases in an unmistakable way. By gastric reflex is meant the nameless vacant sensation in the epigastric region so perfectly described by DeQuincey in his "Confessions." That a certain proportion of exophorics (who overcome their exophoria) have this reflex is indisputable. Two cases presented intractable superior dental neuralgia (with teeth in the most perfect condition) that yielded to prisms, bases in, for permanent use. Another case exhibited the complete picture of acute glaucoma that subsided within three days after the incorporation of prisms, bases in, in distance correction.

Treatment.—The treatment of exophoria calls for about as nice discrimination as any problem in medical practice.

First of value, I would place right living, hydrotherapy and abundant sleep; second, the most painstaking refraction; third, convergence training. This may be of various kinds, but I have resorted mainly to two kinds, namely, converging exercises on a pencil from arm's length in toward the root of the nose until the convergence near point is reached and the patient sees double. This was invariably prescribed to every exophoria. Pencil converging exercises to the left and right (as suggested by Duane) was of service in a few cases.

The second element in convergence training is by means of prisms, bases out, according to the method popularized by Gould as "weighting the convergence stimulus." The patient is given a pair of 5-degree prisms in a frame with which he walks toward a candle flame, placed at the far side of the room. The prisms are raised as he goes toward the light. As soon as he reaches it, the prisms are dropped before the eyes and he backs away from the light, gazing steadily at it all the time. Should the light be seen double, the patient immediately retraces his steps and again backs away from the light until he goes the entire length of the room, holding the candle light single. This is done from ten to fifteen times, two or three times daily. After a week, 10-degree prisms are ordered to be used in the same way; in another week or two, 15 degrees or 20 degrees *according as the patient rapidly or slowly learns* the trick of dissociating his accommodation and convergence. This method is of value in all exophorics.

Prism exercises were resorted to in this manner in 147 of the 200 cases as the sole optical treatment aside from the wearing of a proper correction; in 26 more the exercises were employed in connection with the use of prisms, bases in, in the patient's distance correction; and in 27 more in connection with the use of prisms, bases in, in the patient's reading glasses.

4. In Prisms, Bases In, for Permanent Use.—The use of prisms, bases in, to be incorporated in the patient's distance correction, has been deprecated by various high authorities. Their chief (and almost unanimous) contention has been that the exophoria for infinity increases under the use of such prisms. That this is true, within certain limits, must be admitted; and yet in anatomic exophoria,[18] when proper correction of the ametropia has failed to relieve, and attempts at training the convergence have been poorly borne, the trial of prisms, bases in, in an extra or hook-front experimentally seems to me entirely justifiable. In cases so selected, it will be found that when convergence has been made somewhat easier to the patient by the use of rest prisms, the convergence may then be trained to a very considerable point, and the convergence for infinity thus kept from increasing. This was my experience in 17 out of 42 cases in which prisms, bases in,[19] were ordered for constant use. It is no more surprising that the exophoria should increase in these cases of anatomic exophoria than that a patient should gradually manifest more and more of a latent hypermetropia as plus lenses are skillfully crowded on his eyes. And I believe there are few cases of anatomic exophoria (due to orbital peculiarities, insertional anomalies, etc.) in which there is not a considerable element of latent exophoria unrecognizable with the Maddox rod because of the overwhelming fusion impulse in such individuals. For such patients I know of no test comparable to the cover test if employed as previously described. It is as wrong to order prisms, bases in, for permanent use without soon after training the convergence to the highest possible point as it would be to rest an inflamed joint and then not exercise it afterward. Many of these patients have a splendidly developed convergence, but it is because of their excessive use of it all day long in overcoming their exophoria that they have their symptoms.

A class of patients for whom convergence training is even more plainly indicated are the exophorics who present but 1 or 2 degrees of deviation for infinity with anywhere from 10 to 15 degrees' deviation at the reading distance (prism divergence being normal). These patients respond finely to convergence training as a rule. There is, however, a small outlying percentage in whom it will be found necessary to supplement convergence with prisms, bases in, in their reading glasses only (these patients are mainly presbyopes) before they become entirely comfortable in near work. In 45 patients for whom prisms, bases in (or decentered lenses), were used, there were ordered prisms correcting one-quarter of the infinity exophoria in five cases; one-half of the infinity exophoria in eight cases; two-thirds of the infinity exophoria in ten cases; the full amount of the infinity exophoria in ten cases; more than the full amount of the infinity exophoria in twelve cases, with uniformly good results.

---

[18] By this is meant exophoria with highly excessive prism divergence and defective temporal arc rotation. (The "Divergence Excess" of Duane; or the "Intrinsic Exophoria" of Savage).

[19] Minus prisms Maddox prefers to call them.

There may be room for doubt as to the wisdom of ordering prisms for constant use, but one need not hesitate to order prisms, bases in, for use in reading glasses only if the divergence for the near point exceeds 10 degrees. From one-third to one-half of the deviation for the near point will usually be gratefully accepted.

OPERATION.

When it comes to the question of operation in exophoria (after all the preceding measures have failed to relieve) there is the widest variation of views among the writers on this subject.

When exercise of the function of convergence has failed Landolt[8] is devoted to advancements. In Hansell's experience[20] advancement will often permanently cure. Savage and Thomas[21] both indorse muscle shortening as the operation of election when other means have not relieved the patient. Posey[22] did DeWecker's capsular advancement in 33 cases of pronounced exophoria, and states that, although after a lapse of two years there seemed but little objective gain, the improvement in the symptoms was marked and would seem to justify the operation. W. R. Parker,[23] if "driven to operation" (and this ought to be the stand taken by every ophthalmic surgeon—he should feel driven to operation), does tenotomy or advancement according to the indications.

In the series here discussed (441 cases) operation was done seven times, and in each instance tenotomy was resorted to. In three cases, the amount of exophoria operated for equaled 10 degrees, in one case 12 degrees, in one case 13 degrees, in one case 18 degrees, and in one case 20 degrees. In two cases in which both externi were equally and moderately divided at the one sitting, there was subsequent homonymous diplopia for three to four weeks, especially in the temporal periphery, but this eventually left the patients with vastly more useful eyes than they had ever had before. All these seven patients were markedly helped by the operation. In each one convergence training (begun from three to seven days after operation) was relied on to finish a cure. Theoretically, advancement is strongly indicated in exophoria, yet in the anatomic variety, with convergence decidedly insufficient and divergence more decidedly in excess, I can see no reason why tenotomy should not be done, first, because there seems no danger of nasty after-results (from five to six years after the tenotomy, such as we see in tenotomies for convergent squint); second, tenotomy is infinitely easier than advancement for these functional conditions and vastly easier of adjustment to the particular condition in each individual, whereas advancement is very much clumsier and more difficult of performance.

In spite of the feeling in some quarters that the stitch by means of which advancement is done is very simple and very easy, I feel disposed to continue doing tenotomies in the very few exophorics (slightly less than 2 per cent.) who need operative help.

CONCLUSIONS.

Finally, the following conclusions growing out of twelve years' earnest thought and work with exophoria are offered with all diffidence as to the result of that experience:

1. Exophoria, as a symptom-producing quantity, has come to the point where it must be viewed as an atavistic phenomenon—a reversion to a lower type—a stigma of degeneration, if some one wishes to insist on it. (I do not hesitate to use the latter designation, as I am myself an exophoric.)

2. All the advantages of binuocular stereoscopic vision are conditioned on convergence only.

3. Convergence as it is daily dealt with may be said to be composed mainly of two elements—the initial or tonic convergence and the accommodative convergence.

4. The amplitude of convergence ought to be always calculated.

5. The average patient has somewhere between 10 and 11 meter angles of convergence.

6. The reserve amount of convergence ought to be about twice as great as the convergence required by the work.

7. The cover test is the most reliable test for study of the position and behavior of the eyes when fixed on an object at twenty feet.

8. When converted into the parallax test much added delicacy is secured.

9. The Maddox rod and a small electric light are much superior, as a test for the muscle balance at the reading distance, to the vertical diplopia test.

10. Nine-tenths of all cases of exophoria will be encountered in individuals over 20 years of age.

11. The frequency of exophoria in the male and female is about equal.

12. Exophoria for infinity generally means deficiency either in the amount of convergence or in the faculty of using it.

13. Low degree exophorias are the most common and the most symptom producing.

14. The average degree of exophoria is least in H + Ah conditions, rises through the M + Am conditions, and is highest in antimetropia.

15. Exophoria assumes three principal forms; i. e., (a) asthenic exophoria (convergence insufficiency), (b) anatomic exophoria (sthenic exophoria), (c) neurasthenic exophoria.

16. About 50 per cent. of exophorias are of the sthenic or anatomic variety.

17. The test of the muscle balance at the reading distance is no measure of the total converging power of the patient and must be supplemented by tests for the convergence near point.

18. The prism convergence is only of relative value as a working indication.

19. The relation of 3 to 1 as between prism convergence and divergence will not nearly hold in exophoria.

20. The influence of hyperphoria in often reducing the power of both divergence and convergence is well

---

[20] The Journal A. M. A., 1895, vol. xxv, p. 745.

[21] The Journal A. M. A., 1895, vol. xxv, p. 745.

[22] Annals Ophth., 1899.

[23] Ophth. Rec., 1901.

known, and no case of functional divergence should be put down as a pure exophoria until hyperphoria of three-quarters of a degree or more has been excluded.

21. In hyperexophoria the use of suitable vertical prisms, with convergence training, will frequently do away with all the patient's symptoms.

22. The symptoms of exophoria do not differ materially from those of other forms of eyestrain.

23. The treatment of exophoria should comprise (in the following order): (a) Right living; (b) careful refraction; (c) convergence training; (d) prisms (bases in) for infinity; (e) prisms (bases in) for the reading glasses only; (f) tenotomy or advancement.

1212 Spruce Street.

DISCUSSION.

DR. EDWARD JACKSON, Denver, in the main, and particularly in his conclusions as to treatment, agreed with Dr. Reber. These conclusions, and particularly the order of importance of the different therapeutic measures, he said, ought to be impressed and taught widely, viz., right living, careful refraction, convergence training, prisms, tenotomy or advancement. These are by no means of equal importance. Both in the number of cases to which it is applicable and in its importance in the cases to which it does apply the first stands far ahead. We can not by operation and training make up for the faulty nutrition of the nervous system. As to the amount of reserve convergence, most ophthalmologists who have carefully studied the accommodation have realized that the amount of accommodation that must be kept in reserve, for the comfort and health of the patient, varies greatly in different persons. It has seemed to Dr. Jackson that the proportion of convergence that could be used habitually varied even more widely, and in general that but a small part of the convergence should be used.

He agreed with Dr. Reber that exophoria becomes more common with increasing age, more particularly as regards near work. Inability to sustain convergence for near work he finds very common at the age of presbyopia. A great many patients are relieved quite as much by prisms, bases in, as they are by change of lens. For a good many years he has tested all refraction cases as to muscle balance with the Maddox rod test, and low degrees of exophoria are extremely common. He would not say that the low degrees are so likely to produce trouble as the high degrees. If we take the total number who develop asthenopia, probably more than one-half of them have quite low degrees. But the number of people who present that amount of exophoria is so much greater than those who present the higher degrees that the low degrees are evidently less likely to cause trouble.

DR. ALEXANDER DUANE, New York, referred to the following points in Dr. Reber's paper: First, as to the convergence near point, he thinks the distance usually given for this (four inches from the center of rotation of the eye) is too great. In his experience for extreme convergence in normal cases the point is not more than three inches from the center of rotation of the eye, or practically two inches from the root of the nose. He determined it very simply by using a very small white headed pin, which is carried in rapidly toward the eyes. The movement, when the convergence near point is reached, is determined (a) subjectively by the fact that the patient sees the pin double; (b) objectively by the fact that the physician can see one of the patient's eyes oscillate and diverge. It is important in this regard to note which eye diverges. In exotropia there is often a relative convergence near point, i. e., the point down to which the patient still makes the attempt to converge, although he may never actually succeed in converging on the object of fixation. It is an important matter to determine this relative near point, for a patient with a comparatively close relative near point affords a much better prognosis both for operation and for orthoptic treatment, than one who makes no attempt at convergence at all.

Second, in testing the exophoria for near he agrees with Dr. Reber that the dot and line (phorometer) test is not very satisfactory, but instead of using the Maddox rod for determining this he uses the cover test (measuring the deviation with prisms), and is sure that he gets trustworthy and precise results.

Third, he can not agree that exophoria for infinity almost invariably means subnormal convergence. In very many cases the presence of 10, 20 or even 30 degrees of exophoria for distance is compatible with perfect converging power and normal ability to overcome prisms, base out.

Fourth, he does not feel that exophoria in anisometropia and other conditions interfering with binocular vision represents necessarily, or even frequently, a reversion to the lower type, a sort of atavistic phenomenon. His explanation is that, owing to the anisometropia, etc., the two retinal images are of different size and distinctness, and it is correspondingly difficult to fuse them. If the patient gives up the fusion effort and sees double it is for his interest to throw the images as far apart as possible, so that they shall often confuse each other less, and this he does. The often spasmodically varying character of the exophoria for distance accords with this view.

Fifth, as regards the use of prisms for constant wear, Dr. Duane is opposed to them, because, while serviceable for a time, they seem in the long run to be detrimental. The untoward efforts may not occur until after they have been worn for a year or so. Not infrequently he has had patients come to him who have worn prisms for a long time and who say that, while at first comfortable, they have later become uncomfortable, and such patients he finds are almost always helped by removing the prisms. Again, prisms, base in, he is sure tend to increase the exophoria for near as well as for distance; i. e., tend to cause a true convergence insufficiency.

Sixth, Dr. Duane says that operating is a last resort, but when the indications are clear for it it does give gratifying results. His rule is: (a) With large exophoria for distance and less, or at least very little more exophoria for near, with good converging power (close convergence near point) and with eyes that can be and have been suitably trained to converge and see binocularly, he does tenotomy of one or preferably both externi. (b) With little exophoria for distance and low diverging power combined with exophoria for near and little or no converging power (remote convergence near point), he does advancement of one or both interni, with tenotomy of the externi. (c) With marked exophoria for distance and near with low or no converging power, and high converging power he does advancement of the interni.

It is understood that the operations are preceded by thorough orthoptic treatment.

DR. MARK D. STEVENSON, Akron, Ohio, said that convergence is chiefly stimulated by the desire for a single binocular stereoscopic vision. It is this desire which creates the so-called initial or tonic convergence which is required, so that a distant object may be seen singly, and it also compels convergence in association with accommodation in seeing close objects. The eyes can usually converge for a much nearer object than they can accommodate for, and this last part of the convergence act is done solely in the interest of single vision. Accommodation and convergence are usually associated only in the central act of convergence and not in its beginning or ending. Those under the effect of a cycloplegic, the old, and some myopes having no accommodation, often have good convergence. In testing for the muscle balance at the distance, the desire for single vision should be eliminated so far as possible, e. g., by making the objects seen with each eye dissimilar, as with the Maddox rod or by displacing the images by means of prisms, so that they could not be fused. However, in testing convergence which depends primarily on the desire for single vision this desire should not be suppressed, but the amplitude of convergence, which is of chief importance, should be determined. This is easily done by first determining the negative convergence, if any, in meter angles and then the positive convergence. The convergence near point may be found by means of a small light, but it is closer to the patient if a small white object on a black background is used, and Dr. Stevenson usually finds the convergence near point considerably closer to the patient than does Dr. Reber. In the *Ophthalmic Record*, July, 1904, Dr. Stevenson described a simple instrument by which the muscle balance at the ordinary reading distance during accommodation for that distance can be determined in a few moments, the patient looking closely at the small figures. By this means the degree of convergence for the reading distance, stimulated only by the accommodation for that distance, may be better determined than by the Maddox rod, as it is not so easy to accommodate for a light. The patient might accommodate for the red streak of light which, seen through the rod, often appears to be at a different distance from the light, and thus over- or under-stimulate convergence.

Dr. G. C. Savage, Nashville, directed attention to some points of vital importance. First, no test of the lateral muscles, he said, is worth anything when made under the influence of a mydriatic. The relationship between convergence and accommodation is such that if one takes away the accommodative power the converging power is disturbed, and one can not get reliable results.

Second, judgment of verticality, horizontality and obliquity is a gift and not an acquisition. He disagreed with Dr. Reber's statement that women can not judge this as well as men; a child can judge it as well as a man and so can a woman. A third point is this, that there is a distinct meaning when there is exophoria in the near and not in the distance, with young people, and if the physician does not understand that and prescribes full-strength convex glasses under a mydriatic he gets the patients into trouble. If a patient has exophoria in the near and not in the far, that patient has a powerful ciliary muscle, which, with a slight impulse from the brain, will focus rays of light from the page easily. Slight excitation of the accommodative center produces a correspondingly slight excitation of the converging center, and hence the feeble convergence. Now if the ophthalmologist prescribes full-strength convex glasses for a hyperope who has exophoria in the near and not in the distance, that patient will never accept those glasses. They will cause suffering until removed. If to such a patient, with, say, diopter of hypermetropia, the physician gives a one-diopter minus lens, he stimulates accommodative effort and so stimulates the convergence center, and comfort comes to the patient.

Dr. F. S. de Lue, Boston, said that in testing his cases for errors of refraction, he examines all for external muscle insufficiencies, and is surprised at the frequency with which exophoria appears when the hyperphoria has been relieved. Generally, the balance soon becomes re-established, and these patients do not complain, or if they are disturbed, it is not for distance, as a rule, but for near work, and a prism, base in, generally for near only, used a short time, gives the needed relief.

Dr. Oscar Wilkinson, Washington, said that there is a certain class of cases in which we get the most gratifying results from the use of prisms. He does not believe in using prisms for every case of exophoria, but when a patient fails to get relief from the correction of the error of refraction and comes back with asthenopia symptoms immediate relief can often be given with 1 or 1.5 degree prisms, base in. In regard to exophoria increasing under the use of prisms, he does not believe we will, as a rule, observe any appreciable increase in the exophoria from the use of the prism if the examination is made with sufficient care in the first instance. It should be made several times under different circumstances, i. e., when the patient is rested and when tired. In the treatment of exophoria an operation is indicated when all other means fail. In cases with more than 10 degrees of exophoria, tenotomy is the operation of choice; in cases with less amount the tucking or advancement operation is indicated.

Dr. Wendell Reber, Philadelphia, said that when he stated that he thought low degrees of exophoria were mostly productive of symptoms it was because they are overcome. Some patients with 3 degrees have more intense symptoms than those with 12 degrees. He called attention also to the fact that prisms for permanent use are not ordered for many cases. It is one of the last resorts and he submits that prisms for constant wear may be absolutely justifiable even though the exophoria does sometimes increase. He agreed with Dr. Duane that the cover test is the most valuable for testing exophoria for distance, but does not agree that it is for the near point. He thinks the small electric light is very valuable. He said that he wished he could feel, as Dr. Stevenson does, that we do increase the power of muscles by exercise, but he does not. He thinks that we simply teach these patients to use a coördination which they already have. Frequently the exophoria decreases and the symptoms subside.

CEREBRAL DECOMPRESSION.

PALLIATIVE OPERATIONS IN THE TREATMENT OF TUMORS OF THE BRAIN, BASED ON THE OBSERVATION OF FOURTEEN CASES.*

WILLIAM G. SPILLER, M.D.
Professor of Neuropathology and Associate Professor of Neurology in the University of Pennsylvania.
AND
CHARLES H. FRAZIER, M.D.
Professor of Clinical Surgery in the University of Pennsylvania.
PHILADELPHIA.

Palliative operations in cases of brain tumor are not new, and the temporary benefits to be derived in this way have been fully recognized by many physicians during many years. It has seemed time well spent to examine some of the reports of cases treated by trephining, or other method of opening the skull, for the relief of pressure when a tumor could not be localized, or if localized could not be removed. Unquestionably many cases have been omitted, and yet I have collected sufficient to demonstrate that palliative treatment has an important place in cerebral surgery.

REVIEW OF LITERATURE.

Annandale[1] said, in 1894, that more than twenty years previously he had opened the skull of a patient whose symptoms were those of general brain pressure and, although no special condition was found, temporary relief was marked. Another case of this kind, he says, was operated on by Sir Joseph Lister in the same wards with success. In 1889, Annandale removed a piece of bone from the skull because of intense headache, following an injury of the head years previously. No abnormal condition was found, although the dura was incised. The patient made an excellent recovery and was perfectly cured. Annandale remarked that when no localized symptoms of brain tumor exist an exploratory operation may be performed, and experience has shown that in some of these cases the operation has been useful in taking off general pressure and in a few instances has even been followed by shrinking or degeneration of the growth. Again, a growth may give rise to effusion of fluid or to hemorrhage, and the symptoms caused by these conditions may be at least temporarily removed by the operation.

Sahli,[2] in 1891, spoke of improvement from palliative operations. The tumor in one case was supposed to be in the cerebellum. Vision improved and headache disappeared after a palliative operation. The patient (a boy) died some months later and no necropsy was obtained. Sahli thinks that two trephinings remote from each other give more relief of pressure than one. Sometimes Nature performs a palliative operation, what he calls *Selbsttrepanation*. In consequence of the pressure the skull becomes thin at the region of the Pacchionian bodies and openings may occur, and in one case he saw the brain protruding through several such openings.

The palliative operation, he thinks, is not ideal, is not without danger, and improvement is only temporary. In one case of prolapse of the brain he observed unconsciousness immediately followed by death. Acute prolapse of the brain may impair the function of the rest of the brain. He recommends small trephinings in preference to large.

---

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session.

[1] Annandale: Edin. Med. Jour., January-June, 1894, p. 898.

[2] Hermann Sahli: Volkmann's "Sammlung klin. Vorträge Innere Medicin," Nos. 1 to 29, 1890-1894, p. 300.

In 1891, White[3] described a number of cases of epilepsy in which improvement followed operation, although nothing abnormal was found.

In 1893, Horsley[4] said that the removal of excitatory symptoms by opening the skull is a marked phenomenon, convulsions ceasing. In one of his cases in which the diagnosis of tumor of the middle cerebellar peduncle was made, the skull was opened only to relieve the pressure, and the cerebellum protruded almost an inch through the trephine hole. The symptoms of tumor soon disappeared, and six months later the man felt perfectly well. He survived eighteen months, and during this time had few attacks. Only a small cavity was found.

Horsley thinks that some tumors are so interfered with in their nutrition by opening the skull and suddenly altering the pressure therein that they forthwith degenerate. In another of his cases the tumor was too large for removal, but the patient survived for over two years, with disappearance of the attacks and improvement of the hemiplegia. The tumor at the time of the operation was obviously malignant and rapidly growing, but had later undergone complete destruction by the mere exposure at the time of operation. Such a result, he says, can not be anticipated or expected as likely to follow, but it is an argument in favor of opening the skull for the purpose of palliating a condition which can not be cured.

Horsley says, also, that he has found in every case the effect of opening the skull has been to remove the headache and, further, that in cases where it was known before operation that the tumor could not be removed relief from severe pain afforded by opening the skull persisted until the patient died. The simple and safe procedure of opening the skull should be undertaken when drugs fail. At the Berlin Congress Horsley pointed out that opening the skull caused the swelling of the optic discs to subside, and that the subsidence may proceed steadily to complete recovery, provided atrophy has not previously begun. If atrophy has commenced the condition is hopeless. Vomiting is dependent on the degree to which intracranial tension is raised, and, as a rule, this symptom disappears when the skull is opened.

Jaboulay,[5] in 1893, obtained good results by trephining in a case of tubercle of the brain without opening the dura. The prognosis from trephining, he thinks, is better the more circumscribed and superficial the lesion.

Caton and Paul[6] trephined the skull in a case of acromegaly in 1893. The dura bulged in the opening. The operation relieved the headache, and the remaining three months of the patient's life were comparatively comfortable.

Macewen[7] did a palliative operation in 1889 in a case with symptoms of cerebellar tumor. The patient experienced great relief. After a week tuberculous tumors were removed from the cerebellum.

Taylor[8] reported a series of cases of brain tumor to show that there is almost invariably a subsidence of optic neuritis after operation whether the tumor is removed or not. This fact, he says, was known to Horsley so long ago as 1888. In discussing Taylor's paper Horsley said that if there is any atrophy present no amount of reduction of pressure within the skull will produce the slightest change or afford the slightest relief in respect of the loss of vision. If there be commencing atrophy, after operation the neuritis that may be present will disappear, but the atrophy is permanent; opening the skull, therefore, is not justifiable if the atrophy is well marked. Horsley was probably referring to the operation only in so far as vision is concerned, as the operation may relieve some of the other symptoms, even though it may be too late to restore vision. The optic neuritis may disappear, Horsley says, even though the dura is not opened.

In a case reported by Keen[9] in 1894, the diagnosis of intracranial tumor was made, but the growth could not be located. Trephining was recommended with a view of relieving intense headache. The tumor could not be found. The bone was not replaced, and, although the brain bulged greatly, headache and hallucinations entirely disappeared, and the man became a quiet and tractable patient. He died four and a half months after the operation, having been much relieved during this time. The operation was performed in 1892. In another case, also, much benefit was obtained by a palliative operation.

Bruns,[10] in a case of brain tumor in which the tumor could not be found at operation, improved the patient's condition by opening the skull. By the end of the third week very little choked disc remained, attacks of blindness no longer occurred, headache was much less severe and vomiting ceased. Similar improvement he had noticed in two other cases of brain tumor after trephining.

Byron Bramwell,[11] in 1894, said that he had advocated trephining for the relief of symptoms in his book. "Tumors of the Brain," published eight years previously, but that he would advocate the operation still more strongly in 1894 in cases in which there is a great increase of intracranial pressure and drugs have failed. When he published his book he had not been aware that Grainger Stewart or any one else had recommended the operation. In many cases the headache is intense, and it has been shown that in some of these cases sudden death occurs, apparently as a result of the mere severity of the pain and sudden inhibition of the action of the heart. In other cases in which the intracranial pressure is greatly increased, the patient dies suddenly in an epileptic fit or as the result of failure of respiration. Opening the dura reduces intracranial pressure and relieves headache, optic neuritis and other symptoms.

In 1894 Kammerer[12] reported a case of supposed tumor of the brain in which double trephining was done for the relief of pressure. The headache disappeared, vomiting ceased for several weeks and then occurred occasionally. The motor power of the right side (previously this side was paretic) improved and some sensation returned. The dura was not incised.

Wyeth remarked that he had trephined in two cases with symptoms of brain tumor and, finding no tumor, had sewed up the dura, but had not replaced the bone: improvement had followed the relief of pressure.

Sänger,[13] in 1894, reported a case of brain tumor in which after opening the skull and dura prolapse of the brain with improvement in the symptoms occurred.

In one of the cases of tumor reported by E. Albert[14] in 1895, in which palliative trephining was done, headache disappeared, but vomiting persisted. The dura probably was not opened. Later trephining was done on the other side of the head, but vomiting persisted. The relief afforded was in regard to headache and might have been greater if the dura had been opened.

---

[3] White: Annals of Surgery, August and September, 1891.

[4] Horsley: Brit. Med. Jour., 1893, No. 2, p. 1365

[5] Jaboulay: Arch. provinc. de Chir., vol. ii, 1893.

[6] Caton and Paul: Brit. Med. Jour., Dec. 30, 1893, p. 1421.

[7] Macewen: Brit. Med. Jour., Dec. 23, 1893, p. 1367

[8] Trans. Ophthal. Soc. United Kingdom, vol. xiv, 1893-4, p. 105.

[9] Keen: Amer. Jour. Med. Sci., January and February, 1894.

[10] Bruns: Neurolog. Centbl., 1894, p. 20; also, 1893, p. 389.

[11] Bramwell: Edin. Med. Jour., January to June, 1894, p. 1067.

[12] Annals of Surgery, vol. xix, January to June, 1894, p. 685.

[13] Sänger: Neurolog. Centbl., 1895, p. 472.

[14] E. Albert: Wien. med. Woch., 1895.

In another case in which trephining was done for brain tumor the dura was punctured. Headache became at once less severe, but the improvement was only temporary. In another case after trephining apparently without opening the dura, vision improved and headache and vertigo disappeared. The symptoms returned and the dura was opened. The operation was not very successful as a palliative means.

Schlesinger,[15] in a case of brain tumor, had a large protrusion of the brain as a result of the operation. The protruded portion could not be replaced, nor was it excised, and when the patient was presented he had a subcutaneous tumor on his head as large as a fist. The general condition improved as a result of the operation, the palsy diminished, the Jacksonian convulsions ceased on the third day after the operation, the choked discs and headache disappeared. Seven weeks had elapsed since the operation at the time of presentation. A later report of this case states that the improvement lasted several months and then the symptoms returned rapidly and death soon resulted. The entire right cerebral hemisphere was replaced by a gliosarcoma.

Decompressive trephining, a term employed by Jaboulay,[16] performed for brain tumor, according to this author, has proven to be of some benefit, more often not. When done for the relief of inoperable tumors. the results are not always brilliant. He speaks of astonishing results produced by trephining in the cerebellar fossa in a case of basal tumor; the pain ceased and the vision improved. The patient lived four and a half months after the operation. Jaboulay seems to believe that the relief in palliative operations is greater for tumors of the cerebellum and adjoining parts than for tumors of the cerebrum.

Broca and Maubrac[17] ascribe to Horsley the honor of being the first to describe carefully trephining as a palliative operation in brain tumor, although scattered references to the subject are found in the literature, and they refer to Annandale and Lister. Horsley recommended making a large opening in the skull without opening the dura. Sahli, they say, recommended excision of the hernia that is produced by opening the dura. especially as the portion of the brain involved in the hernia is impaired in its function. They say that Kocher did operate in this way on a child in the service of Sahli for a tumor not localized, but probably in the cerebellum. A hernia of the cerebellum was excised and benefit resulted. Broca and Maubrac employ the term "cerebral decompression." The palliative operation, they think, exposes the patient to the danger of shock, and when the operation is performed at an advanced period of the disease death is not exceptional. When the patient survives, the most distressing symptoms are lessened or disappear entirely, and. therefore, the palliative operation should be employed. It does not cause more rapid growth of the tumor. Exploratory trephining, when the diagnosis of location has been incorrect, has taught us that cerebral decompression may give important results. These authors express themselves in favor of partial removal of a tumor when the whole can not be excised. but are undecided as regards Horsley's view that partial ablation may retard the growth of the remaining portion. They report two cases of tumor in which palliative operation was beneficial.

In 1895 J. J. Putnam[18] remarked that he knew of one patient who, in consequence of simple opening of the skull, had been free from pain for many years, though blind. He said he had seen relief from pain by large openings in the bone in several cases of brain tumors.

Shultze's[19] results from palliative operation in brain tumor were disappointing, as recorded in his paper published in 1896. He speaks of it as often dangerous, but at times beneficial.

Ludwig Bruns[20] thinks that when the tumor can not be removed or only a small part of it is removable, trephining does not affect the focal symptoms, but causes the general symptoms quickly to disappear if the opening is large. Consciousness returns, headache, vomiting and choked discs disappear. In two of his cases the patients, who had hovered between life and death, had been able to walk again after palliative operations. In one of his cases (glioma of the occipital lobe) improvement lasted several months; in a second case it lasted some weeks. As headache in many cases does not return at all, the recurrence of symptoms is not so distressing and the patient passes into coma. The tumor, by growing through the opening, removes the pressure on the lymph tracts within the skull. Bruns says the opening in the skull must not be too small, and the dura must be opened.

Clarke and Morton[21] report a case of tumor of the brain without localizing symptoms, in which a large area of the skull was removed for relief of intracranial pressure and the dura was not incised. Headache disappeared. They remarked that Beevor and Ballance thought that removal of bone alone without incision of the dura was not likely to relieve intracranial pressure, but they (Clarke and Morton) believe that the actual increase in the bulk of the cranial contents may not be considerable if the tumor is small, and the bulging of the dura mater even to a very limited extent may be sufficient to relieve the increase of the intracranial pressure caused thereby. Clinical evidence in Caton and Paul's case, as in their own, showed distinctly that removal of an area of bone alone is sometimes sufficient. Except for the recurrence of fits five months after the operation, the trephining was of great benefit in Clarke and Morton's case. Optic neuritis subsided, leaving some consecutive atrophy, but the patient had good vision, was entirely free from headache and vomiting, except once during the last series of fits, had recovered his mental powers and had a comfortable existence.

Alfred Wiener[22] reports a case of irremovable tumor. After opening the skull, headache and convulsions disappeared for about two months, but the tumor grew through the opening of the skull, attained considerable size on the outside of the skull, and the symptoms returned. Wiener speaks in favor of trepanning in cases of brain tumor, even when there is no other hope of success than the relief of the general symptoms.

Rohmer[23] has collected a large number of cases in which the palliative operation in tumor of the brain had a beneficial effect on vision.

von Bergmann[24] has called attention to the fact that in contrast to those cases in which improvement was pronounced after palliative operations for brain tumor others are recorded in which no benefit was obtained, and, indeed, the symptoms were made worse. The improvement is only temporary and in some cases has been of very short duration. The operation also is dangerous. Improvement has occurred after merely opening the skull or after opening the dura also; surgeons, therefore, he said, preferred to remove a large piece of bone and leave the dura intact, but, as cerebrospinal fluid can escape only after the dura is opened, the incision of the dura is a necessary part of the palliative operation. There was a tendency, he said, to stop at a palliative operation, and this must be strongly combated. The future of the surgical treatment of brain tumors lies in the advancement of diagnosis, and in this way the almost thankless palliative operation may be changed to a radical cure. As the escape of cerebrospinal fluid is more important than the opening of the skull, v. Bergmann recommended lumbar puncture. Since v. Bergmann wrote his book experience has shown that lumbar puncture in cases of brain tumor may be dangerous. He has been pessimistic both as regards palliative and radical operations for brain tumor. He gives a long list of cases in which exploratory and palliative operations were done, but almost all of these were attempts at removal of a tumor. In his book (1899) occurs the expression, "decompressive trepanation." He refers to a case reported by Remsden in 1825, in which trephining was done for headache.

---

[15] Schlesinger: Neurolog. Centbl., 1895, p. 702, and 1898. p 974.
[16] Jaboulay: Lyon Médical, 1896, p. 73.
[17] Arch. Gén. de Médecine, February, 1896, p. 129.
[18] Boston Med. and Surg. Jour., Jan. 16. 1896. p. 66.
[19] Shultze: Deuts. Zeit. f. Nervenhlk., vol. ix, 1897, p. 217.
[20] Ludwig Bruns: "Die Geschwülste des Nervensystems," S. Karger. Berlin, 1897, p. 229.
[21] Clarke and Morton: Brit. Med. Jour., 1896, p. 802.
[22] Wiener: New York Med. Jour., Oct. 15, 1898, p. 541.
[23] Rohmer: Revue Méd. de l'Est., 1898, p. 525.
[24] "Die Chir. Behandlung von Hirnkrankheiten," Berlin, 1899.

Sänger,[25] in 1894, reported two cases to show that under certain circumstances trephining is proper, even when a tumor can not be removed. In 1899 he presented a case of brain tumor in which a palliative operation had been performed. Inunctions were at first effective, but later the symptoms became very severe. An opening was made over the cerebellum and the cerebellar lobe at once protruded; when the dura was incised much cerebrospinal fluid escaped into the bandages for more than three weeks. After the operation vomiting and headache ceased and full recovery seemed possible. Choked disc disappeared, and vision improved so much that the patient was again able to read. The gait also improved and ataxia became hardly noticeable. The operation was performed Aug. 7, 1899, and the presentation of the patient was made Nov. 14, 1899.

Babinski,[26] in 1901, reported a case in which a tumor could not be found after the cerebral dura was opened, although the symptoms had been so severe as to make an operation desirable. The headache and vomiting ceased after the operation, which was performed January 14. The choked discs disappeared by January 30. The presentation of the case was made Feb. 7, 1901. In another case Babinski observed signs of an intracranial disease. The patient had an intermittent discharge of cerebrospinal fluid by the nose. Headache was lessened by the escape of fluid and became more intense when the flow ceased. Nature in this way produced decompression, he says. This case is not unlike some others reported in the literature in which Nature has effected a means of relief for intense intracranial pressure, and bears a resemblance to a case observed by me in consultation with Dr. Laplace and reported in this paper (Case 1).

A. Sänger[27] presented a case in which he had made the diagnosis of cerebellar tumor and an opening was made over the left cerebellar lobe. The improvement was marked, and Sänger believed that either the tumor had undergone a retrograde change or the condition was hydrocephalus. Of eleven cases in which a palliative operation was performed, the symptoms were much lessened in ten. The time for operation that Sänger chooses is the beginning of impaired vision. When the opening is made over the cerebellum the dura must not be opened immediately.

In 30 cases of brain tumor studied by Leslie Paton[28] that were operated on, useful vision was saved in 22 and the vision was as good as before the operation in 18. It is impossible to draw conclusions regarding his cases in which a tumor was removed and those in which a palliative operation was performed. In the discussion following Paton's paper J. S. Risien Russell said he had no doubt that trephining was of great value in saving sight. He never hesitated to recommend the operation, even in cases in which there was no chance of either localizing the tumor or removing it, for by relieving the intracranial pressure alone sight could be saved. His experience had been that removal of bone alone was not sufficient; it was usually necessary to open the dura in order to obtain sufficient relief of pressure to bring about a subsidence of the optic neuritis. Paton also expressed himself in favor of opening the dura, as he did not believe merely opening the skull was of much benefit. In two cases only the cranial cavity was opened, and blindness developed in both.

Codman[29] says:

> In 28 of the 36 operations the attempt at a radical removal of the tumor was made, and in the eight worst cases only was it decided to do only a palliative operation. I think we may almost say it is certain that if in no case the attempt at radical removal had been made and, instead, a simple operation for the relief of pressure had been done through an intermuscular incision over a "silent" portion of the cortex, the mortality would have been greatly diminished and the percentage of improvement been made much greater. I do not mean to say by this that radical operation in the hands of a surgeon who has made a specialty of brain work is not justifiable, but that in the hands of most of us, a simple palliative operation will be far better in the long run.

In my opinion, only one who has made a specialty of brain surgery should attempt to remove a brain tumor.

J. J. Putnam[30] reports cases of palliative operation. In Case 2 marked relief from terrible headache and optic neuritis followed the making of a large trephine opening in the parietal region, and this, too, although the bone was replaced. This improvement was attributed to the escape of cerebrospinal fluid, which gushed in large quantities from the wound in the parietal dura. The tumor was a glioma of the lateral lobe of the cerebellum. In Case 3 a large tumor mass protruded through the trephine opening, pushing the skin before it. A measure of relief followed the operation. Recently, in association with Watermann, he has reported other cases. Lund[31] also has reported improvement from the palliative operation in cases of tumor of the brain.

Cushing[32] has reported recently cases in which the palliative operation has been of much benefit.

DR. W. W. KEEN'S CASES.

I add condensed notes of two unreported cases in which palliative operation was performed by Dr. W. W. Keen, with improvement in each.

---

[25] Sänger: Neurolog. Centbl., Dec. 1, 1899, p. 1118.

[26] Babinski: Revue Neurolog., 1901, p. 266.

[27] Sänger: Verhandl. d. Deuts. Gesell. f. Chir., 1902, p. 158.

[28] Trans. Ophthal. Soc., United Kingdom, vol. xxv, 1904-5, p. 129.

[29] Codman: Boston Med. and Surg. Jour., July 20, 1905, p. 74.

[30] Putnam: Boston Med. and Surg. Jour., July 20, 1905, p. 76; also Jour. of Nerv. and Ment. Dis., May, 1906.

[31] Lund: Boston Med. and Surg. Jour., July 20, 1905, p. 81.

[32] "Surgery, Gynecology and Obstetrics," vol. 1, 1905, p. 297.

Case 1.—Jan. 3, 1901, E. H. M., aged 26, complained of failing vision and had later several attacks of temporary blindness. Among the first symptoms were severe headache on the right side and vomiting, later the pain shifted to the left side. He was found to have extensive optic neuritis. He has a little vision now in the left eye but is blind in the right eye. He has sharp boring pains which shoot from the upper occipital region to the back of the left ear. The patellar reflexes are exaggerated. Dr. de Schweinitz, Dec. 17, 1900, found optic neuritis passing into atrophy.

Dr. Keen, Jan. 30, 1901, made an osteoplastic flap over the left parieto-occipital region. The dura was very tense. Four small openings were made in the dura, but nothing abnormal was discovered. The brain was punctured in the attempt to reach the lateral ventricle and the attempt probably was not successful. The piece of bone was removed entirely. The patient was discharged February 18, almost entirely relieved of his headache.

At Dr. Keen's suggestion, I made inquiries regarding the present condition of this man and received the following letter, dated April 20, 1906: "I am wonderfully improved and relieved as to pain, can not see except to distinguish between night and day, have not been bedfast for a year or more, at intervals have severe pain, say every week or two, lasting from twelve to twenty-four hours, after which brain is very sore. Since last July have been having a discharge of the left nostril, of a watery-like fluid, since that the pain is not quite so severe."

Case 2.—Feb. 5, 1903. E. B., aged 37. During the summer of 1894 a small tumor developed in the scalp on the posterior portion of the right parietal bone producing headache and a sensation of pressure. In the summer of 1895 this mass was removed. His physician stated that it was a fatty tumor. All the pain and pressure symptoms disappeared and he was perfectly well.

After several months the headache and pressure sensation gradually returned; simultaneously with the onset of the headache his eyesight began to fail, and for the last two months he has been partly blind. He has had frequent vomiting, but he attributes this to the iodids. Ataxia was noticed in the finger-to-nose test. His gait is ataxic with a tendency to fall to the right. Lateral movements of the eyeballs are ataxic. Patellar reflexes are minus. Dr. Sweet found papillitis passing into optic atrophy in both eyes.

Feb. 11, 1903, Dr. Keen exposed the cerebellum over nearly one-half of the right half of the occipital bone. The dura was extremely tense on palpation. The patient was discharged ten days after the operation entirely relieved of his headache and with the wound healed.

Dr. John T. Howell wrote to me, April 23, 1906, that the patient died in a hospital in England, July, 1904, after an operation in February of the same year. The skull was opened above the ear and a large tumor was taken from the brain. After returning from the Jefferson Hospital, in 1903, the patient's improvement was of short duration.

(To be continued.)

PHARMACOPEIAL OR PROPRIETARY PREPARATIONS: WHICH?

JOHN RITTER, Ph.G., M.D.
Clinical Instructor, Department of Chest, Throat and Nose, Rush Medical College.
CHICAGO.

The medical profession is confronted with the difficult task of providing an effective method of checking the practice in vogue with many of its members of prescribing and recommending various proprietary remedies, many of which are most fraudulent.

It is sometimes difficult to draw hard-and-fast lines regarding what really constitutes an ethical preparation in contradistinction to a so-called "nostrum." It is not good practice to condemn *in toto*, with one stroke, all proprietary preparations, for undoubtedly ethical, nonethical and even many nostrums possess some therapeutic properties, since in the composition of most of them certain well-known drugs are used

Irrespective of the composition and therapeutic value of the medicament, the medical profession brands as nostrums all which make claims to possess curative properties wholly at variance with well-known laws of drug administration. At times the physician is greatly perplexed and confused by the vast array of preparations which are offered, recommended and extolled for the treatment of various disorders and maladies, and through this uncertainty he has at times been led to prescribe proprietary preparations when in *reality* he has been of the opinion that he was recommending and prescribing strictly pharmaceutical remedies.

It would be an excellent plan if both practitioners of medicine and members of the pharmaceutical profession would look very carefully into the composition and combination of all new chemical, synthetic and Galenical preparations (not excluding "patented" nostrums which are from time to time offered to physicians as valuable therapeutic agents), would examine the preparations and their literature very carefully and would report the findings to the various medical or pharmaceutical societies. Then, should the preparations show any extraordinary merit, they might devise preparations of equal efficacy, if not superiority, and probably at very much less cost to the consumer.

Our standard, the United States Pharmacopeia, has already shown us the way and can always be our guide. For instance, at present there is on the market a great and ever increasing number of acetanilid combinations, differing very little in composition, but under very different and fanciful names. In order to avoid this confusion of names, and in order to harmonize the medical profession, the committee of revision of the United States Pharmacopeia has ordered incorporated into the United States Pharmacopeia the preparation known as *pulvis acetanilidi compositus*. Therapeutically it matters very little if in all these various preparations the amount of citrate of caffein is 1/50 grain more or less, or if the amount of bicarbonate of soda is ½, ¾ or 2 grains in each dose, or if the alkaline salt be bicarbonate of soda, or potassium carbonate, or carbonate of ammonia, each of which is added simply as a solvent for the acetanilid. The same rule could be used in all similar preparations which are now or may be offered.

Another example: Since the reintroduction[1] of earth into the materia medica as an antiphlogistic application a number of preparations with fanciful and arbitrary names—names, in most instances, suggestive of an antipyretic—have been offered to the medical profession, and here again, in order to extricate the physician from this chaos, the United States Pharmacopeia has come to the rescue and has formulated and offered to the profession a most efficient and reliable combination in "cataplasma kaolini."

It has taken many years to bring the different liquid preparations of opium, which at various times were extolled by irresponsible vendors and charlatans as boons to humanity, to assuage suffering, under a distinct class. Tinctura opii, tinctura opii camphorata and tinctura opii deodorata of indefinite strength were for years sold under various names by ignorant and unreliable persons, a very dangerous practice, considered from the present standpoint of drug administration. Tinctura opii of indefinite strength was then generally known as laudanum, Abbe Rousseau's drops, tinctura thebaica, tinctura meconii.

---

[1] The use of earth or clay as a topical application is as old as medicine itself. Applications of earth or clay or of earth mixed with oil or fat were the only remedies used on painful surfaces by the poor in ancient times. Then followed the use of earth and molasses, hot or warm sand or salt, then bread and milk poultices, linseed meal, and now it is popular to use earth and glycerin.

Tinctura opii comphorata still has some adherents, especially among the laity, under the old names of Bateman's pectoral drops, Godfrey's cordial, paregoric, Schultz's antispasmodic drops, while tinctura opii deodorata is still occasionally prescribed by old practitioners as McMunn's elixir. Now the therapeutic value of all these different preparations of opium depends on the definite percentage of the alkaloid morphin present in the various grades of the drug used. The various pharmacopeias of the different nations, and especially the U. S. Pharmacopeia, have directed that, in order to secure uniformity in medication and reliability in results, all grades of opium used in the preparation of the various pharmaceutical preparations containing opium must conform to a standard of at least 12 per cent. of morphin assayed in the grades of opium used. In times gone by, when the different preparations of opium were vended under these many different names, they were all more or less unreliable and even dangerous, as they were prepared without any knowledge or regard to the amount of morphin contained in the drug. It is well known that some grades of opium assay as low as 1 per cent. and others as high as 16 per cent. and even higher. Scores of other and of similar examples can be mentioned.

Tinctura aloes et myrrhæ, under the name of Elixir Paracelsus, was known in remote times. Tinctura benzoini composata as a topical remedy had a wide reputation under the euphonious names of Friar's balsam, Turlington's balsam. Linimentum saponis was known as Stear's opodeldoc, infusum sennæ compositus as Vienna draught, not to mention Dover's powders, Donavon's solution, Labarraque's solution, Goulard's extract, Basham's mixture and many others.

Take, for example, the various combinations and mixtures of cod-liver oil which are now on the market and with which most physicians are familiar either through the medium of the daily press or through the advertising columns of medical or pharmaceutical publications, by the liberal supply of samples or by waste-basket literature. The literature is usually very adroitly worded, calling the attention of the physician to a pleasant and palatable preparation of cod-liver oil, and the physician who prescribes these preparations is flattering himself that probably in a given case of pulmonary affection, or in the convalescence from an infectious disease, or perhaps in the after-treatment of typhoid or pneumonia he is giving a tissue builder, a nutrient, a food in the form of an elegant cod-liver oil medication, when, as a matter of fact, he is doing nothing of the kind. It is not even indicated in the literature or on the label that the preparation contains cod-liver oil, although the words cod-liver oil appear in glaring big type. What the circular or printed matter generally says is: This preparation *represents the value* of 25 per cent., 33 per cent. or 50 per cent. of cod-liver oil. But it does not say that it contains a minim of cod-liver oil. [The alcohol soluble admixtures of cod-liver oil, consisting of biliary acids and bile salts, trimethylamin, volatile ammonia, some fatty acids and traces of iodin, phosphorus and phosphoric acid, sulphur and sulphuric acid, with some coloring matter wholly inert, is made by the addition of expectorants, anodynes and corrigents into a pleasant-tasting elixir, cordial or tonic, but not a trace of cod-liver oil can be found in it.] These preparations may possess some therapeutic properties and undoubtedly may be very useful in the treatment of bronchitis and in pulmonary affections generally. Similar preparations, but of definite strength and uniformity, may be devised if the profession must have such combinations.

At present, by means of samples, circulars and pamphlets, through the public press and in some of our journals and magazines intended to be read at the fireside and in home circles, even by some of our medical publications, various preparations are advocated and recommended in the treatment of real or imaginary uterine diseases and are usually mentioned as uterine tonics. Although some make claims for good wholly unwarrantable, still a few grains of truth may be found in all the chaff. Reliable and honest pharmaceutical houses have taken the cue and have formulated preparations, some of undoubted merit, which may be used with more or less good results in the treatment of the various uterine disorders. These pharmaceutical houses have sampled the medical profession liberally, both by the way of trial medication and printed matter, but especially the latter, and from this practice the physician has acquired the pernicious habit of prescribing these so-called uterine tonics. In the National Formulary, a book which may be called an appendix to the United States Pharmacopeia, and which is compiled for the purpose of furnishing to the medical profession good and reliable formulæ for all unofficial preparations, such as physicians may unhesitatingly prescribe, a good and an efficient combination suitable as a uterine tonic may be found.[2]

If the physician would devote about half an hour each week looking over the United States Pharmacopeia, a good dispensatory, the National Formulary or a standard work on materia medica or therapeutics, he would soon acquaint himself with good, reliable and accurate formulæ and remedies, preparations which he need not hesitate to prescribe; preparations on which he could rely at the bedside, where, after all, the supreme test of the physician's skill must be demonstrated; and instead of continually racing after strange gods it would eliminate from his mind all the various uncertain compounds and mixtures—nostrums—with which he is now burdened.

Such time would be well spent. It would familiarize the physician with many a good medicament and teach him its composition, and, most important of all, it would teach him what he might expect from it therapeutically. The difficulty lies in this: the average physician devotes too little study to materia medica and therapeutics. A better acquaintance with the United States Pharmacopeia and with materia medica and works on therapeutics is most essential in combating the ever-progressive proprietary medicine evil.

170 Colorado Ave.

---

[2] Elixir viburni opuli compositum, in the National Formulary, is as follows:

Fluid ext. viburnum opulus	f. ℥i¼	38|
Fluid ext. trillium	f. ℥iss	75|
Fluid ext. aletris	f. ℥i¼	38|
Compound elixir of taraxacum	℥xi	330|

Pilocarpin.—Dr. S. West employs pilocarpin in both uremic and diabetic coma, giving from 1/12 to 1/6 of a grain hypodermically and repeated at intervals. He has never seen anything but good come of it. Pilocarpin is more reliable and less dangerous, he thinks, than the infusion of jaborandi.—*Clinical Journal*, May 30, 1906.

Clinical Notes

TWO CASES OF INFECTION WITH TÆNIA NANA IN THE PHILIPPINE ISLANDS.

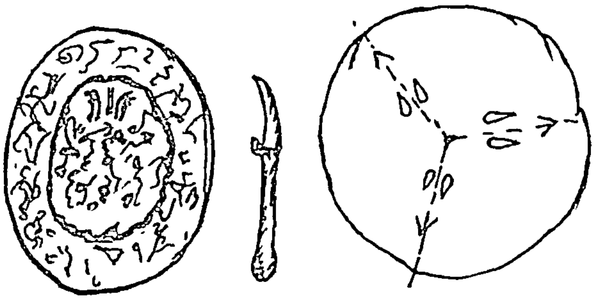
CHARLES L. FOSTER, M.D.
Lieutenant and Assistant Surgeon, U. S. Army.

During my tour of duty in the Philippines, two cases of infection with *Tænia nana* (*Hymenolepis nana*) came under my care, and a brief outline of the symptomatology in these cases and a description of the ova of the parasite may be of interest, especially in demonstrating the fact that infection with this tapeworm is not infrequent in the Island of Luzon and that the damage to the host may be severe.

NARRATION OF CASE.

The first case under observation was a private of E troop, 8th U. S. Cavalry. After the recent epidemic of Asiatic cholera in and around Manila, one squadron of the 8th cavalry was stationed along the Mariquina river, from which stream is derived the water supply of Manila, to guard the river from pollution. E troop took station at Mariquina, a town five miles from San Mateo.

Case 1.—The patient had marched with his troop from Fort William McKinley to Mariquina and soon after arrival was taken sick. Forty-eight hours later I saw the man. As several deaths from Asiatic cholera had occurred at Fort McKinley just before this troop left, it was feared that this man might have the disease.



Figs. 1, 2, and 3.—Ovum with inner membrane surrounding embryo. Hooklet with rounded extremity for musculature. Diagram showing arrangements of hooklets in three planes.

Symptoms.—When I reached Mariquina the man had nausea and vomiting, with frequent loose and watery stools; intestinal cramps, not very severe, and no cramps in the muscles of the limbs. He was very weak, but there was no collapse and the pulse was fairly strong and regular. Temperature: Mouth, 99 F.; rectum, 100.

Treatment.—The patient was transferred to the hospital at San Mateo by ambulance, and after taking a little cracked ice and brandy the nausea and vomiting were relieved.

Stools.—The first stool was examined. It was watery with a few flakes of brownish material scattered through it; not at all like the rice-water stools of cholera. Under the microscope there were seen epithelial cells in various stages of degeneration, fatty acid crystals, and bile-stained débris. The usual products of severe intestinal inflammation were not present. Hundreds of ova (Fig. 1) were seen. Each stool was saved (male fern had been administered on the second day after admission) and search made for the worms, but none could be found, and, after the first morning of the patient's admission to hospital, no ova were found. The intestinal antiseptics and purge administered before I saw the man, it is supposed, caused the expulsion of the worms; the stools were not carefully examined until the patient entered the hospital. He gained rapidly in strength and weight and was soon returned to duty.

Case 2.—The second case was under treatment one month later. The man is a member of the hospital corps.

History.—He gave a history of chronic diarrhea in 1898, contracted while in Puerto Rico. He was operated on in 1904 for appendicitis. For several months he has been troubled with constipation, loss of appetite, coated tongue, and distended and slightly painful abdomen. He is nervous and does not sleep well, and has abdominal distress after eating.

Examination of Stools.—The stools were formed, dark-yellow in color, with flakes of mucus scattered through them. Under the microscope, ova in every respect similar to those noted before, were found; and, also, many *Cercomonas intestinalis.* The man was put to bed and given a preliminary purge and two 3 c.c. doses of male fern. After several hours the stools were examined and about forty unbroken *Tæniæ nanæ* were obtained. Several of the worms were brought out by the purge.

THE OVA.

The ova are transparent and not bile stained, oval. almost round, in shape; about 30 microns in the short diameter and 35 microns in the long. The shell is very thick, not rigid, and not radially striated, and contains here and there coarse granules. Immediately surrounding the embryo is a delicate membrane (Fig. 1). The protoplasm of the embryo contains many granules of various sizes. Six hooklets are attached to each embryo (Fig. 2); these are arranged in pairs and their points almost touch the inner membrane. The curved points of the ends of the hooklets are directed from the center of the group, in three directions. The arrangement of the groups of hooklets, and the fact that in several of the ova the hooklets had perforated the membrane and were projecting into the shell almost to its outer surface (Fig. 4), and that in others the points of the hooklets were widely separated from each other and some distance from the membrane, suggested to me that perhaps the function of these hooklets was to free the embryo from the shell. Diligent search was made to see if any motion of the embryo could be observed. At length one embryo was found in active motion within the shell. The points of the hooklets were first drawn together and the whole armament thrust against the adjacent part of the surrounding membrane and into the shell; then the hooklets made a circular sweep around a point near their blunt extremities as a center, in three planes at angles of 120° to each other (Fig. 3). This thrust and sweep was repeated at the rate of about once in ten seconds. The motion continued for about one hour, at the end of which time the envelope had been cut through about three-fourths of its thickness. Motion then grew slower and soon ceased altogether. During the motion of the hooklets, motion of the protoplasm of the embryo could be traced by the granules contained

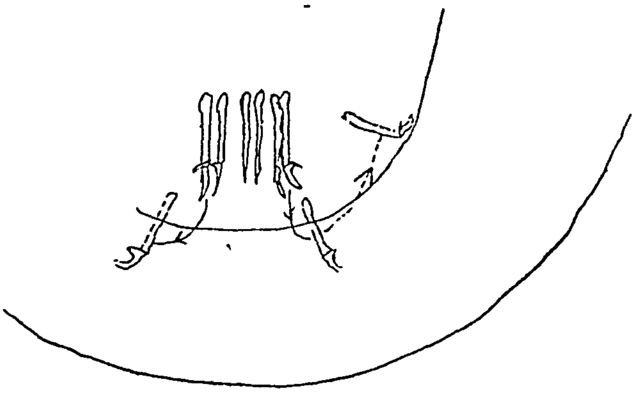


Fig. 4.—Diagram showing how points of hooklet are thrust into the shell and then swept around through it.

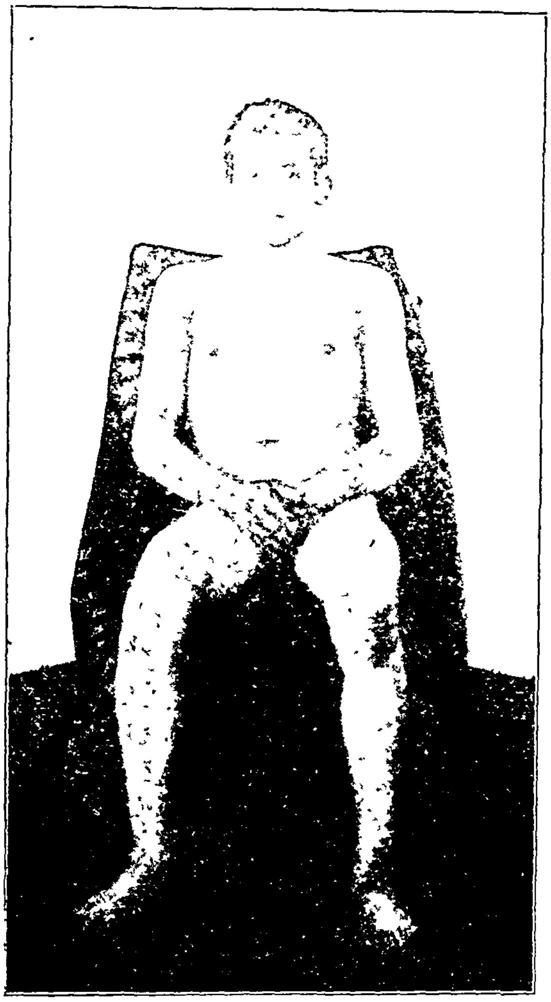
therein. No embryos free of their shells could be found. This movement was observed in the embryos passed *per anum* by both patients, also in those expressed by cover glass from the fresh worm obtained from the second case.

The parasite is found in several of the lower animals, especially rats, in which animal, it is stated, an intermediary host is not required.

ROCKY MOUNTAIN SPOTTED FEVER.

CHARLES E. MOOSER, M.D.
RENO, NEV.

I read with interest two articles on Rocky Mountain spotted or "tick" fever in The Journal, July 7, 1906. This fever exists in Nevada, but cases do not seem to be so numerous or so fatal as those occurring in Idaho, Utah and Montana. Here they occur almost, if not exclusively, among sheep-herders, so I am somewhat surprised that Dr. H. N. Mayo does not even mention this class, though they are plentiful in the states named.



About three years ago my first patient with "tick" fever came to me. I did not recognize the condition as such, hence can not say whether the patient, a sheepman, had been bitten by a tick. The infection was severe and I feared that I would lose the patient. He got up at the end of eight weeks, and recovered slowly thereafter, and in time became entirely well. The treatment in this case was symptomatic, as outlined by Dr. Mayo.

Within the past two months I have had six cases, five Frenchmen and one Spaniard, all sheep-herders. They came from three different camps (one of which seems to have acquired a reputation for having such cases yearly), two from each camp. Without exception all the men gave a history of one or more very recent tick bites. All the patients were severely infected, two especially so. None of the cases terminated fatally; all were typical cases. The Spaniard's case was the most severe, perhaps because he came to me later than the others, having tried to "fight off" the trouble. He came in an extremely emaciated condition, resembling the pictures of Cuban reconcentrados published in the papers during the Spanish war, and in marked contrast to the puffed features of the others. A very distressing phase of his illness was a cough resembling that of an advanced case of phthisis. Examination of lungs was negative and the results justified the belief that no serious lesions were present, as the cough disappeared with the eruption.

Unfortunately no special blood or other tests were made, owing to lack of facilities.

In great contrast to the first case mentioned all of these patients were practically well within three weeks—out of bed, etc.—final recovery being very rapid thereafter. With but slight exceptions, calling for some special drug, all the patients were given practically the same treatment. An initial dose of calomel and jalap, followed next day by quinin, 30 grains twice daily for one week (a little longer for the Spaniard), then in gradually diminishing doses until the temperature remained normal for two days.

Strychnin sulphate was given when necessary. A seidlitz powder or two was given every morning. Sponge baths were also given. No quinin was given in my first case. Other cases with which I am familiar, and in which quinin was omitted or given in small doses only, lasted, as did my first case, about two months. In those in which large doses were used the majority of patients recovered in from ten days to two weeks. The accompanying illustration of the patient in my last case (not a very good photograph) shows the typical eruption.

CONGENITAL MEMBRANE IN THE NASOPHARYNX.

RICHARD H. JOHNSTON, M.D.
BALTIMORE.

Patient.—Mrs. M. E., aged 35, was referred to me for examination and treatment of nose and throat.

History.—For a number of years she had had trouble with the right ear in the nature of a purulent otitis media. With the removal of the ossicles she experienced great relief from certain subjective symptoms while the discharge was reduced to a minimum. She complained of dryness of the nasopharynx which had existed for a long time and of disagreeable sticking and gagging sensations which combined to make life miserable. From her efforts to remove the secretion, nausea and vomiting ensued. There was constant tinnitus in the left ear.

Examination.—The nose showed nothing abnormal with the exception of a dryness of the mucous membrane. The pharynx was dry and parched and covered with a layer of thick grayish secretion which apparently came from the nasopharynx. The examination of the latter revealed a curious condition of affairs. After cleansing the posterior pharyngeal wall the mirror could be used with ease. Coming down from the roof of the nasopharynx and extending entirely across the cavity was a distinct membrane which divided the space into anterior and posterior parts. The membrane had its origin behind the openings of the Eustachian tubes, neither of which was visible. About the center of the membrane was a round perforation extending a little further to the left than to the right. Through the hole could be seen the lower two-thirds of the septum, the inferior and the middle turbinates on the left and a little to the outer side of the septum on the right. Above and to the right, midway between the opening and the lateral wall, and at the point where the membrane came off from the roof, was a second elongated opening much smaller than the first. The margins of both openings were perfectly smooth and clear cut. The membrane passed downward and became gradually lost on the posterior wall of the soft palate.

No tuberculosis or specific history could be obtained. From the large extent of membrane and from the clear cut margins of the openings, there can be no doubt that it was congenital. The nose was in fair condition and it seems proper to assume that the partial obstruction to nasal breathing had contributed in part at least to the extreme dryness of the throat. A proposition to attempt the removal of the membrane was declined by the patient.

Royet[1] has an article on insufficient nasal breathing caused by bands of tissue extending from the Eustachian tubes to the posterior wall of the nasopharynx. He cites two cases in which the destruction of such bands restored nasal breathing and relieved tinnitus of long standing. In a third case the bands adhered to the soft palate. In this case the mirror could not be used so it is impossible to say just what the character of the bands was.

Molinie has reported two cases of annular contraction of the nasopharynx. Courtdade in 1903 related that he had long recognized the fact that a cause of pharyngeal obstruction was the partition of the nasopharynx by filament-like bands.

Royet concludes: 1. That bands of tissue from the tube to the posterior pharyngeal wall can cause obstruction to nasal breathing which in most cases is slight. 2. In the majority of cases they are associated with other lesions of inflammatory origin in the nasopharynx and contribute their part in diminishing the permeability of this canal. 3. In both cases their destruction is indicated.

In a somewhat careful review of the literature I have not found a case like the above. Complete atresia of the nasopharynx with atresia of the nose has been recorded as giving rise to great deformity of the face with impaired mental development. Escat in his work on diseases of the pharynx pictures two such cases. They are very rare. My patient did not get sufficient air through the nose on account of the membrane and the dryness of the mucous membrane of the pharynx was certainly due in part to mouth breathing. It is probable that the tinnitus and the suppuration in the middle ear were connected with the formation in the nasopharynx.

The proper treatment was undoubtedly the removal or the tearing through the abnormal tissue to give better nasal respiration.

919 N. Charles Street.

THE FLUOROSCOPE IN DIAGNOSIS OF ANEURISM.

G. R. GAGE, M.D.

AND

H. H. HEYLMUN, M. D.

HUTCHINSON, KAN.

History.—W. H., aged 29, married, gave a negative family history. For 12 or 13 years, until two months ago, his occupation had been that of a steam hammer driver. On an average of probably 5 times a day he would throw his weight on a heavy lever, alighting on the abdomen. He had never had any illness from the age of 14 to 24; he had been a hard drinker; was treated 8 years ago for specific trouble, which showed as a row of indurated ulcers, extending around the corona; this condition baffled his physicians for 10 months, but yielded immediately to the application of dry calomel. No suspicious symptom developed since.

Eight years ago he noticed pain in his left hip and leg, which rapidly became very severe, compelling him to walk with a cane for the next four years, though not preventing him from attending to his work in the machine shop. For the past four years the pain has been present more or less constantly, though not so severe as formerly, and not severe enough to necessitate the use of a cane. For the past year he has suffered from a heavy boring paroxysmal pain in the abdomen, which would sometimes be absent for a day or two, but most of the time present and getting progressively worse.

Appetite was fair; there was no trouble with digestion, no nausea and bowels were regular. There was some emaciation; patient was pale, expression indicated suffering.

Examination.—Examination of abdomen revealed pulse of 94, temperature normal, and marked condition of arteriosclerosis. There was tenderness over the great sacrosciatic notch. There was what appeared to be a spasm of the recti muscles; with head and knees elevated a tumor, hard and immovable, was made out just to the right of the umbilicus. The tumor was pulsating and seemed to possess that peculiar expansive pulsation indicative of aneurism. On auscultation a blowing sound was heard somewhat like that of a mitral regurgitation. This bruit almost entirely ceased after the patient had been in the recumbent position a few moments. Comparing the anterior tibial pulse with that of the radial, the former was found to be about one-third of a beat behind the latter. There was no swelling of the ankles or dilatation of the superficial veins of the abdomen, nothing to indicate interference with return circulation.

As a possible aid to diagnosis, the patient was placed in front of an *x*-ray tube requiring a 7 inch spark gap. By the aid of the fluoroscope a dark shadow about 3 inches across laterally was discerned at the site of the tumor. By close attention one could readily make out an expansion and contraction of this shadow corresponding with the pulse beat; this expanding and contracting shadow had very much the appearance of the heart as seen through the fluoroscope and immediately appealed to us as being a diagnostic procedure of great value in cases in which aneurism is suspected.

In this case the diagnosis of aneurism of the abdominal aorta was made and the family acquainted with all the facts of the case, also the possibility of a mistake in diagnosis which could be positively determined only by an exploratory incision.

Operation.—Consent of the patient and family was readily given and the patient prepared for operation. While under the anesthetic, and the abdominal wall relaxed, an elevation was seen at the location of the tumor. An incision was made through the right rectus muscle, directly over the most prominent point of the tumor, and after working gently through some slight adhesions, an aneurism half as large as a teacup was found. It appeared to be fusiform at its lower extremity, which was just above the bifurcation; the right side was lobular and extended fully an inch to the right of the median line. Owing to the fact that the patient took the anesthetic very poorly, no further exploration was made, and the wound was closed.

In this case there was a positive history of alcoholism and a probable history of specific trouble, either one of which may have been the cause of the arteriosclerosis. The continued bruising of the vessel at this particular point, no doubt, had to do with causing the aneurism.

The point in the case which seems of the most value to us, and the one to which we desire to call the attention of the profession, is that of the use of the fluoroscope. These patients are usually more or less emaciated and afford excellent subjects for *x*-ray work, and the expansive pulsation of the tumor is much more perceptible to the fluoroscope than it is to the finger tips.

Naming of Carbon Compounds.—In the *Pharmaceutical Review*, July, W. A. Puckner, Chicago, publishes a compilation "of terms, syllables, prefixes and endings commonly employed in the naming of carbon compounds," for the use of students in pharmacy and medicine, and for pharmacists and physicians. Chemical terms which are usually unintelligible to the average physician are explained in simple language, and the derivation is given.

---

[1] Royet: Revue Hebdom. de Laryng., etc., Feb. 3, 1906.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price........Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, SEPTEMBER 1, 1906.

FEATURES OF LIFE INSURANCE EXAMINING WHICH DEMAND CORRECTION.

In the radical reformation which is taking place in some of the life insurance companies as the result of the recent investigations and the exposure of gross irregularities, it is to be hoped that the status of the medical examiner will be considered, the importance of his duties more keenly appreciated, and correction made of conditions which have sometimes made it difficult for the examiner to do his work without violating his sense of decency and self-respect. The abuses which we have in mind have grown up, for the most part, in connection with high-pressure methods of soliciting new business, arising from the intense competition among the companies and the eagerness to pile up a large surplus. It is evident for the last few years the agency department of many of the companies has been the dominant factor, and the insistent command has been "get new business," at whatever cost and at whatever sacrifice to the other interests of the company; "get new applications, even by force or fraud, if such be necessary." It is equally evident that such a course is not conducive to the best interests of the policyholders, who are the real owners—the stockholders of the company.

All this is of interest to the examiners because they have unwittingly been made parties to these methods in a variety of ways. Until recently in many companies the appointment of examiners was largely controlled by the agents and this power was often made use of to secure applications from physicians under the promises of appointment to an examinership. How detrimental this was to the interests of the other policyholders is well shown by a statement recently made by the medical director of one of the largest of the American companies. The death losses for a period of five years, during which the examiners were recommended by the general agents, were compared with the losses for a similar period immediately following a change to the plan of appointment entirely independent of the agency department. It was ascertained that the actual saving to the company through lessened mortality under the latter plan had been sufficient to pay the total expense of the medical department during that period, including all examination fees, salaries of medical officers and other expenses.

The interests of the agent, the placing of his risks and securing his commission are, in a sense, antagonized by the interests which the examiner is appointed to protect. The cordial relations which should exist between the examiner and the agent are not promoted by ignoring this fact, but by its frank recognition, and by the confidence of the agent that the physician is capable and honest and will always give his applicant a "square deal." It is essential to such pleasant relations, as well as to the efficiency of the examiner, that he should occupy an absolutely independent position in reference to the agent, being responsible directly and only to the medical department. Any arrangement which enables the agent in any way, directly or indirectly, to coerce the examiner is unfair to the physician and bad for the company. Such coercion is possible when two or three examiners occupy the same territory for one company, if the agents are permitted to take their examinations to the examiner of their choice. It is possible in such a case for the agents to take most or all of their cases to a favorite examiner, making his income from this source a large one, while the other examiner has little or no business. In such instances the examinations should be made independent of the agent either by having a chief examiner to whom all applications are submitted and who assigns them equitably, or by placing the examiners on a salary (usually objectionable on other grounds), or through a pooling of the examinations by the physicians themselves.

We shall have something more to say along these lines in subsequent issues.

CAISSON DISEASE.

It has been demonstrated by means of experiments on animals that the serious results to health which are frequently the accompaniment of the duties of professional divers and of those who work in caissons must be attributed to a too rapid rate of the process of decompression on return to the normal condition. Up to a few weeks ago the most reliable data with regard to the disease had been collected by M. Hersent, a French engineer. In 1894, at Bordeaux, he had carefully noted and discussed the influence of high air pressure on the human subject in the persons of three workmen who had voluntarily submitted themselves to the ordeal in the interests of science. These men were enclosed in a steel chamber, and the experiments were conducted under the observation of a commission composed of members of the Bordeaux Faculty of Medicine. The defects of M. Hersent's investigations lay in the fact that no scientific records could be taken on the spot, as would have been the case had a trained scientific experimenter been in the chamber.

Dr. Leonard Hill, F.R.S., and Mr. Greenwood, M.R.C.S., two Englishmen, have been recently engaged in personal experiments[1] of a like nature with the object in view of clearing up some obscure points. They caused to be constructed a large steel cylinder in which one or the other was shut. This had a capacity of 42.2 cubic feet, with a motor-driven pump for effecting compression and taps for decompression. It may be said that both the experimenters were in excellent physical condition at the commencement of the investigations. Drs. Hill and Greenwood underwent varying degrees of pressure in their cylinder, and each wrote a diary of his sensations. The highest pressure to which Dr. Hill was subjected was 75 pounds, while Mr. Greenwood underwent a pressure of no less than 90 pounds. Neither suffered from serious after effects, not even when the maximum pressure of the series was reached, one corresponding to a water depth of 210 feet. The point especially emphasized was the vital importance of a gradual decompression period. In fact, the authors assert that "the responsibility of those who allow short decompression periods is clear; every death or case of paralysis from air embolism must be set down to the negligence of the contractor." It is also pointed out that, during the process, it is essential to exercise well every muscle and joint of the body, and to change the posture frequently in order to maintain adequate capillary circulation.

---

[1] Proceedings of the Royal Society of London, February, 1906; Lancet, June 30, 1906.

The experimenters faithfully recorded the physiologic changes induced while under pressure in the chamber. It was noticed, among other effects, that at three atmospheres the vibratile movements of the tongue and lips practically ceased. All distinct sensations of pressure in the ears was relieved as soon as the pump ceased its strokes, and the pressure in the chamber became constant. The final conclusion arrived at was that an adult may be safely submitted to a total barometric pressure of at least seven atmospheres, provided that the precaution of making the period of decompression gradual be strictly observed.

There is probably more caisson work going on, as a rule, in the United States than in any portion of the globe. The danger attending the work was much in evidence during the construction of the last suspension bridge in New York, when several of the workers suffered severely from "caisson disease." The investigations of the English medical men are, therefore, valuable, and their advice as to the decompression period should be taken to heart by all large bridge builders in America.

MARITAL CONSANGUINITY AND DEFECTIVE CHILDREN.

There are not a few, even of physicians, who are apt to consider that the old-time ecclesiastical regulations forbidding the marriage of blood relatives, which have become the basis for most of our modern legislation on this subject, are founded on moral rather than on good physical grounds. There is a natural feeling of repugnance against the marriage of very near relatives, but there is an impression, now altogether too general, that cousins may marry with impunity. For those who entertain any such idea the report of the United States Census Bureau on the blind and the deaf, which has recently been published by the Government Printing Office, will provide material for very serious consideration. This report is written by Dr. Alexander Graham Bell, better known popularly as the inventor of the telephone, but who has a world-wide reputation as an expert of scientific thoroughness with regard to deafness and its causes and conditions.

Some years ago Dr. Bell succeeded in demonstrating that nearly three times as large a proportion of the deaf children born of parents who are cousins are congenitally deaf as of children born of parents who are not thus related. This average is confirmed by the statistics collected very carefully for the present census report, and statisticians in other countries have found practically the same proportion, occasionally even worse.

With regard to the blind the state of affairs as pictured by the census report is even more deterrent. Of the blind who were the offspring of consanguineous marriages, meaning that the parents were related as closely as cousins, proportionately 3.67 times as many are born blind as in the case of the blind who were children of those who were not so related. In the case of both the deaf and the blind the census figures show that 4.5 per cent. of all cases are the offspring of parents who are cousins. With regard to the blind, altogether some sixty thousand cases are analyzed, so that there would seem to be no doubt that the conclusions arrived at are amply justified and that the results obtained are not mere coincidences nor to be attributed to a narrow view of the question.

In discussing the statistics, Dr. Bell points out that the view of the situation obtained is likely to be better, instead of worse, than is actually justified by the real state of affairs. It can be readily understood that many persons, when questioned as to the consanguinity of parents, either refuse to answer or occasionally even prefer to deceive rather than to admit the possible influence of this fact in their condition. From not a few of the deaf and blind it has been impossible to obtain definite statements with regard to parental relationship. All such cases have been excluded from the statistics. It seems not unlikely that most of these cases were really examples of parental consanguinity, and they would make the expectation as to defective children even more appalling than it is. In not a few cases, as every physician knows, the consanguinity of parents is deliberately concealed from children whenever the surrounding circumstances (as, for instance, residence at a distance from other relatives) allows the subterfuge.

Already the number of defective children is so much on the increase from the stress and strain of large city life that every possible factor which adds to the probability of the reproduction of further unfortunates must be removed. Medical examinations of school children show that defects in the special senses are particularly frequent. If parental consanguinity can, as is proved by these statistics, add to the number of the totally blind and deaf, then it must be even more important as an element in the causation of such minor defects in the special senses which are serious handicaps in the battle for life. If this state of affairs is true for blindness and deafness, it can be concluded that it is also true for all the complex physical mechanisms which underlie the most important functions of human life. German statistics show that stutterers, for instance, are more common in the families of related parents than among the ordinary population. Various muscular weaknesses of a hereditary character must be placed in the same category.

It seems clear, then, that the marriage of cousins should be discouraged in every possible way. The possibilities of offspring being deformed or defective are already sufficiently appalling to make prospective parents uneasy. To increase the chances of such an unfortunate event by three or four times is enough of itself to give the most careless person pause. About one-half of the states in the Union have laws forbidding the marriage of cousins by blood and it would seem that their example should be followed by the other states.

THE DECREASE OF DRINKING AMONG PHYSICIANS.

A religious paper claims that drinking is on the increase among physicians, and in support of this statement it refers to a banquet that was given under the auspices of the staff of one of the hospitals of a large city west of the Mississippi River, at which, it was reported, only four of the fifty physicians present abstained from drinking. The report may be true, but we can not accept the conclusion it is quoted to support. We do not believe that drinking habits are on the increase among physicians. There are many who drink some and some who drink too much on occasions or even habitually, but we believe that there were many more of this kind a generation ago, and as the advocate of temperance the medical profession is much more to the fore at the present time than at any previous period. The statement is one of those unfortunate generalizations based on insufficient knowledge of the facts, and one which a religious journal, of all others, should be most careful to avoid.

THE CASE OF "DR." CARSON.

The *Independent*, a weekly journal published in Kansas City, is a good running mate for *Collier's Weekly* in the fearlessness with which it exposes frauds and fakes of all kinds. The newspapers of Kansas City have not yet reached that commendable state in which they exercise discrimination in the publication of objectionable advertising. This is particularly true so far as medical advertisements are concerned. Mr. George Creel, the editor of the *Independent*, has been giving considerable space to the exposure of the doings of quacks. In a recent issue he devotes some space to one "Dr." C. H. Carson, who poses as a "vital healer" and whose place of residence, where all the "cures" are effected, is known as the Temple of Health, or, as the *Independent* puts it, the Pimple of Wealth. The treatment employed by "Dr." Carson consists of the laying on of hands, blessing tissue paper to place on tumors in women's breasts, placing bits of torn paper in an envelope, with the warning that they must not be exposed to light, etc. It would appear that "Dr." Carson and his methods ought to be made the objects of a vigorous investigation by the State Board of Health. So far as we can learn, the "doctor" is not licensed to practice, and if he is not practicing medicine within the meaning of the medical-practice acts of Missouri and Kansas, thus relieving the State Board of Health of any responsibility in the case, the matter ought to be taken up in the interests of the people by the Medical Society of Kansas City. Meanwhile the *Independent* is to be congratulated on its courage. It deserves the support of medical men, as well as of the public.

ALCOHOL AS AN INTERNAL GERMICIDE.

A health commissioner of one of our great cities, according to the newspapers, recently uttered the rather rash advice to use whisky or alcoholic drinks to prevent typhoid in the existing unsafe condition of the city water. It is hardly possible that the advice was given seriously. It was probably merely a facetious suggestion inspired by the local atmosphere of the city hall, but it has been generally taken up by the newspapers and more or less seriously discussed. As an advice to the public in general it is about on a par with the ancient recipe for the cure of the toothache, to "let an omnibus run over your foot." We would not venture to say how much alcohol it requires to kill a bacillus, but it would take a rather unsafe quantity to neutralize any very thoroughly infected water. Alcohol may, in certain conditions, be a useful medicine, but it is rather unreliable as a prophylactic for most diseases.

Medical News

ILLINOIS.

New Sanitarium.—It is reported that Drs. Jeremiah H. Stealey and Carl F. Snyder will establish a modern sanitarium in Freeport.

To Enforce Laws.—The Board of Health of East St. Louis has instructed the Health Inspector to see that conductors of street cars enforce the laws regarding expectoration.

Personal.—Dr. and Mrs. Lyman Ware, Chicago, have returned after four months in Europe.——Dr. Albert H. Dollear, Jacksonville, has been appointed assistant physician of the Illinois Western Hospital for the Insane, Watertown.

Reform in Asylums.—The State Board of Charities, in its quarterly bulletin, states that as a result of its inquiries, the board feels that there is pressing need for a correlation of the energies of the state hospitals for the insane. No two institutions are alike, but in the majority of items of administration, standardization is necessary to elevate the institution to a high plane of efficiency and economy. The hospitals for the insane were found to be topheavy on the custodial side. The superintendents are burdened with business details which prevent them giving sufficient attention to the medical administration. For this reason, the hospitals are more like detention boarding-houses than places for the modern treatment of hopeful cases, and the industrial re-education of chronic types.

Chicago.

Typhoid Fever.—No increase in typhoid fever was reported during the week except in Rogers Park and Maywood. In Rogers Park the cause was attributed to the use of well water, which has been found to contain large numbers of the colon bacillus, and in Maywood the interference with sewage disposal pending the construction of a new sewer, is said to be the cause of the condition.

Deaths of the Week.—The total deaths from all causes in Chicago for the week ended August 25, was 589, 58 more than for the preceding week, and 12 more than for the corresponding week of 1905. The mortality was equivalent to an annual death rate of 14.91 per 1,000. Acute intestinal diseases caused 149 deaths; consumption, 58; heart diseases, 37;; pneumonia, 34; cancer, 32; Bright's disease, 31; and violence, other than suicide, 38.

Heat and Humidity.—During the week ended August 25, 9 deaths were reported as caused directly by sunstroke, but this represents only partially the effect of the prolonged high temperature and excessive humidity. Of the increase of 58 deaths, as compared with the previous week, cancer and heart disease contributed each 12 and acute intestinal diseases 24. It is probable that in these cases the fatal termination was the result of the prevalent weather conditions.

INDIANA.

Added to Faculty.—Dr. Lemenuel W. Famulener, for three years research fellow in pharmacology under Dr. Cushny at the University of Michigan, and for one year a worker with Dr. Mansen in the Statens Serum Institute at Copenhagen, has been appointed assistant professor in pathology at the Indiana University.

MARYLAND.

Baltimore.

College Building to Be Sold.—It is reported that the Baltimore University building on Bard Street will be sold and the institution closed.

Increase of Typhoid.—The usual autumn increase of typhoid is manifest, fifty-five cases of typhoid having been reported last week and eleven deaths.

Acquitted.—Dr. John W. C. Cuddy, charged with causing death by an illegal operation, has been discharged by the grand jury, no evidence being found against him.

Physicians Injured.—Dr. J. Ridgeway Andre, an aged physician, still in practice, suffered injuries, August 21, by a breakdown of his carriage and consequent runaway.

Plan for Extermination of Mosquitoes.—Dr. Bosley, health commissioner, proposes a plan for the extermination of mosquitoes, which includes fines on tenants or property owners who allow water to stagnate in their yards, and makes health wardens and police officers responsible for the conditions and for failure to report violations of the laws. The present municipal agencies are to be employed in this work, so that the plan involves no extra expense to the taxpayers.

Vacation Time.—Dr. Ira Remsen is at Prout's Neck, Maine. ——Dr. George Reuling has returned from Narragansett.—— Dr. William H. Howell is at Chebeague Island, Maine.——Dr. James D. Iglehart is at Saranac.——Dr. R. Martin Bruns is at Allenhurst, N. J.——Drs. George W. Mitchell, Robert Hoffmann and Albert Colby are in Paris.——Dr. Amanda Taylor-Norris is at Rehoboth Beach, Del.——Dr. Joseph Blum is at Ocean City, Md.——Dr. William Whitridge is in Rhode Island.——Dr. Howard Kelly is traveling in Europe.——Dr. T. Chew Worthington is taking a trip to Niagara Falls and the Thousand Islands.

MINNESOTA.

Personal.—Dr. F. Dale Smith, Oronoco, was thrown from his buggy July 26, and sustained a fracture of the leg.——Dr. John W. Andrews, Mankato, is taking a trip to Southern Oregon.

Bly Imprisoned.—Dr. Theron H. Bly, Minneapolis, convicted of performing a criminal operation, and sentenced to imprisonment for three years and a half, began serving his sentence in the state penitentiary, Stillwater, August 11.

Scarlet Fever in Eveleth.—The Commissioner of Health of Eveleth announces that there have been 24 cases of scarlet fever in the city, but that the outbreak has been mild and well under control, and that the number of cases has decreased since July 10. Since August 1 there have been not more than nine cases at any time and there are but four existing now.

Bemidji Man Said Not to Be a Leper.—Arndt Reton, classed by the Bemidji physicians as a leper and placed under quarantine far away from the city, made his escape and went to Cass Lake, where he was examined by the physicians, who claim that he is not afflicted with the disease. The two toes which he had lost were amputated as the result of frozen feet two years ago.

Care of Veterans.—Under the direction of Dr. Charles A. McCollom, Minneapolis, chairman of the committee on health and comfort, the physicians of the city organized for special duty the week of the encampment. The entire city was divided into sections and a force of 150 physicians assigned on duty in this division.. In cases where public school buildings were used for dormitories a special physician had been placed in charge of each. In all notices sent out, the lodging places and the name and address of the physician in charge of the district was given. Headquarters were opened in the old city hall building for the entire encampment, and two ambulances were secured. Nine stations were established along the line of march and the results showed the great care exercised in the organization of the medical service.

MISSOURI.

Fined for Selling Cocain.—A clerk at the Franklin Pharmacy, St. Louis, on August 14, was fined $20 and costs on the charge of selling cocain to two women. This is the first prosecution under the law for selling cocain without prescriptions therefor.

Hospital Staff Chosen.—At a meeting of the Home Missionary Society of the Methodist Episcopal Church of Springfield, the following staff of physicians for the new Burge Deaconess Hospital was elected: Drs. John C. Matthews, William C. James, George W. Barnes, John W. Williams and John P. Ralston. The attending staff are Drs. Francis E. Ross, Jonathan E. Tefft and William M. Smith.

Cancer Deaths Increasing.—The statistics of the St. Louis Health Department show that cancer is on the increase in the city, notwithstanding the decrease in the total number of deaths. In the year 1903-04, 11,486 deaths occurred, 391 of which were from cancer; in 1904-05, 11,364 deaths, of which 398 were from cancer, and in 1905-06, with only 9,833 deaths, 438 deaths are reported to be due to the disease.

Tenement Board Named.—The mayor of Kansas City has sent to the council an ordinance naming a tenement board of seven, of which Dr. Orville H. Dove is the medical member, together with a communication pointing out the necessity of such a commission. The duty of this board is to investigate the tenements of the city, to report to the Board of Health the conditions existing among the city's poor, and to recommend such ways and means for the improvement of the situation as are thought necessary and practical.

NEW YORK.

Bequest.—By the will of the late Theodore S. Hubbard, Geneva, a bequest of $500 is made to the Geneva City Hospital.

Diphtheria in Watertown.—During July there were 17 cases of diphtheria reported in Watertown. Despite the investigations of the Board of Health no cause could be determined for the disease.

Typhoid Fever.—Corning reported 152 cases of typhoid fever, due in every instance to the use of water from wells. The city water has been analyzed and has been found to be free from all disease germs.——On account of the prevalence of typhoid fever in and around Baldwinsville, Dr. F. P. Sinclair, Lysander, has been authorized by the Board of Health to make a thorough examination of the camps and cottages in the vicinity.

Buffalo.

Hospital Acquires Land.—The Children's Hospital, Buffalo, has acquired a tract of land adjoining the hospital for the purpose of building an extension to the institution.

Personal.—Dr. W. Harry Glenny is at East River, Conn.—— Dr. Stephen Y. Howell has returned from the sea shore. Dr. Reuben M. Root from the Muskoka Lakes and Dr. Frank W. Love from Lake Bonaparte.——Dr. Matthew D. Mann will go on a hunting trip to Wyoming and Colorado early in September.——Dr. F. Park Lewis will return from Europe shortly. ——Drs. Irving W. Potter and Roland O. Meisenbach were recently elected on the staff of the German Hospital.——Dr. Harry Mead has been at the Thousand Islands.

New York City.

Trachoma Increases.—It is stated that ten sufferers from this disease have been deported daily from Ellis Island during the last two months, a much larger number than usual.

Personal.—Dr. John A. Billings arrived on the *Baltic*, August 22.——Dr. Henry F. Owsley, Flushing, has sailed for Europe.——Dr. Mary G. Patten is visiting in southern California.

Filtration in Sight.—Bids have been asked for an experimental plant for Jerome Park reservoir. This experimental plant is merely the forerunner of a great filtration plant that will be erected after the experimental plant shows just what the ingredients of New York water are.

Fresh Air Camp.—A fresh air camp has been established by the Association for Improving the Condition of the Poor and is in operation at the foot of Sixty-second Street, for the treatment of infants under 18 months of age. It has accommodations for fifty and every cot is occupied.

Typhoid in Brooklyn.—Since August 1, 76 cases of typhoid fever have been reported to the health authorities of Brooklyn. No definite cause has been found for the unusual prevalence of the disease, but the general belief is that it is due to the inferior quality of the drinking water supplied from the Ridgewood reservoir.

For Tuberculosis Hospital.—Plans have been filed by the Department of Charities for a new tuberculosis hospital to be erected in the Borough of Richmond on land recently purchased near the present City Farm. The buildings will be eight in number, each four stories high, 80 by 137 feet, on the ground plan, and will cost $800,000. This institution will be called the Sea-Side Hospital.

Opposes New Building for Hospital.—Comptroller Metz opposes for the present the erection of new contagious-disease pavilions in connection with the Kings County Hospital. The citizens of the neighborhood are endeavoring to have this hospital removed to a less crowded neighborhood. The Board of Health will ask for the appropriation of $32,000 for the contagious pavilions, and if no better location is available, the extension to the present hospital will be undertaken.

Error in Certificate.—Dr. Simon M. Roth, charged with falsely filling in a death certificate, was acquitted in the Yorkville police court, August 9. His certificate read that the decedent, Lena Schultz, 38 years old, died at 233 East Seventy-eighth Street, but in reality the woman's name was Green, she was 18 years old and died at 138 East Seventy-eighth Street, the residence of a midwife. Under the new law it is not necessary to certify as to the direct as well as the indirect cause of death.

Vital Statistics for Second Quarter.—The report of the Health Department for the quarter ended June 30 shows 25,692 births and 18.928 deaths, equivalent to an annual death rate of 18.29 per 1,000. There were 12,467 marriages, a gain of 1,584 over the same period of last year. Pulmonary tuberculosis claimed 2,319 victims, tubercular meningitis 221 and other forms of tuberculosis 113. There were 1.527 deaths from pneumonia and 1,223 from violence. Of children under 5 years of age there were 6,237 deaths, of which 801 were due to summer complaint. Of the deaths 8,967 occurred in the tenements.

Contagious Disease.—There were reported to the sanitary bureau for the week ended August 11, 371 cases of tuberculosis, with 173 deaths; 128 cases of diphtheria, with 16 deaths; 125 cases of measles, with 4 deaths; 116 cases of typhoid fever, with 16 deaths; 56 cases of whooping cough, with 11 deaths; 9 cases of cerebrospinal meningitis, with 10 deaths; 53 cases of scarlet fever, 8 cases of varicella and 1 case of smallpox; a total of 867 cases with 230 deaths. There were reported to the sanitary bureau for the week ending August 18, 376 cases of tuberculosis, with 176 deaths; 151 cases of diphtheria, with 20 deaths; 113 cases of typhoid fever, with 10 deaths; 67 cases of measles, with 6 deaths; 51 cases of whooping cough, with 18 deaths; 32 cases of scarlet fever, with 2 deaths; 9 cases of cerebrospinal meningitis, with 4 deaths; 17 cases of varicella and 1 case of smallpox; a total of 817 cases, with 236 deaths.

OHIO.

Personal.—Dr. Max Heidingsfeld, Cincinnati, has gone to Berne, Switzerland, to attend the meeting of the Dermatological Congress.——Dr. David P. Shie, Orrville, who is critically ill with hepatitis, is improving and believed to be on the way to recovery.

Free Antitoxin.—The State Board of Health has made an arrangement whereby it acts as a distributing agency to supply diphtheria antitoxin to local boards of health for use where it might otherwise be unavailable on account of poverty. The antitoxin is the property of the manufacturer and is to be paid for by the local boards of health as required.

Typhoid Fever at Cincinnati.—Drs. Martin Lewis and Dudley Palmer of the house staff of the City Hospital have gathered some interesting data regarding the epidemic of typhoid fever. Between April 1 and August 13, 230 cases of the disease were treated at the hospital. The cases were located between Liberty Street and Walnut Street east to the bottoms, and again on Central Avenue from the city hall to Liberty Street and south of McMicken Avenue and west of Eggleston. This territory receives its water supply from the Third Street reservoir. They find typhoid most prevalent among the Hungarians and other recent immigrants who have little or no knowledge of the laws of hygiene.

PENNSYLVANIA.

Operated On for Appendicitis.—Dr. Calvin H. Elliot, resident physician in the Insane Asylum at Harrisburg, has been operated on for appendicitis in the Medico-Chirurgical Hospital, Philadelphia.

Sanitarium Burned.—The main building of the Grand View Sanitarium, an institution for the treatment of consumptives near Oil City, was burned August 19. The loss is $5,000, partly covered by insurance. The patients, 196 in number, all escaped uninjured.

Dr. Mackey's Death.—In the notice of the death of Dr. Charles D. Mackey, Montrose, which appeared in The Journal of August 18, page 528, it was stated that he was a member of the Susquehanna County Medical Society from 1888 to 1901. The secretary of the society writes that this is incorrect, as at no time was Dr. Mackey a member of the society.

Hydrophobia Prevalent.—It is reported by Dr. Aime Leteve, who is in charge of the Magee Pathological Institute, Pittsburg, that there are a large number of cases of hydrophobia in Western Pennsylvania, Ohio, West Virginia and Maryland. As many as thirty cases have been under Professor Leteve's care at one time during the last two months, and at present there are sixteen under prophylactic treatment at the institute.

Food Commissioner Victorious.—A notable victory in the administration of the pure-food laws of the state has been achieved by Dr. B. H. Warren, dairy and food commissioner. The commissioner's chemists having discovered sulphur dioxid in much of the candy examined, charges were brought against the manufacturers and dealers. The manufacturers stated that the glucose containing this preparation (which was used for bleaching) was supplied solely by the glucose trust, a subsidiary of the Standard Oil Company. The commissioner had included the representatives of the trust among those against whom charges had been made, and the trust, seeing it was useless to fight the state law and the commissioner, asked for a conference. At this conference the trust's attorney admitted that the charges were true and promised to settle all fines against the manufacturers, and, moreover, to withdraw all bleached glucose from the markets of Pennsylvania and from the markets of the United States. In this manner the commissioner has drawn the attention of the entire country to the fact that harmful substances are universally used in the manufacture of glucose candy, and by the enforcement of the pure-food laws has eliminated for the future this danger to the public health.

Report of Food Commissioner.—Dr. B. H. Warren, state dairy and food commissioner, in his report for 1905 states that the milk supply of Philadelphia "has no superior, if equal, in any city in the United States." Many hundreds of samples of milk and cream were collected for examination, with most satisfactory results. The crusade in the interests of pure food has been expensive, but has been the means of saving many lives in other sections of the state as well as in Philadelphia. A smaller percentage of adulterated, preserved or impure articles of food and of milk in particular is sold. The number of prosecutions ordered during the year is much less than during the preceding years. The following summary of the total number of suits ordered by the commissioner shows the decrease in figures: In 1903, 1,800; 1904, 1,517, and 1905, 1,085, a total of 4.402. The report says:

> The decreasing figures form their own commentary. The continued violation of the oleomargarine law was productive of the next to the largest number of suits ordered in 1905, namely 187, while thirty defendants were charged with violating the renovated butter law. The sale of chemically preserved meat, sausage, etc., resulted in the ordering of over 200 prosecutions. Jellies, jams and preserves were found illegal in 144 cases, while Marachino cherries produced

fifty-three unfavorable chemists' reports. Eighty-three samples of catsup were found to be illegal, while prosecutions were directed against fifty-two dealers who sold Worcestershire and other sauces containing forbidden chemicals. In strange contrast with previous reports, only forty-seven samples of milk and cream proved unlawful.

Philadelphia.

Public Baths.—The total number of bathers at the city bath-houses last week reached 605,066. Of this number, 131,156 were men, 4,757 women, 449,982 boys and 19,171 girls.

Bequests.—By the will of the late Ellen Summers $2,000 is to be divided equally among the West Philadelphia Branch of the Little Sisters of the Poor, St. John's Orphan Asylum for Homeless Boys and the House of the Good Shepherd.

Trachoma in Immigrants.—In fifty out of the 340 steerage passengers who arrived on the American Line steamer *Westernland*, August 20, traces of trachoma were found. It is expected that about one-fifth of this number will be deported.

New Officials for Health Bureau.—Director W. M. Late Coplin, of the Department of Public Health and Charities, has made the following appointments: Dr. Augustus H. Clagett, assistant medical inspector; John H. Lehman, nuisance inspector, and Thomas H. Nelson, milk inspector.

Personal.—Dr. Samuel W. Morton is slowly recovering from a severe attack of appendicitis.——Dr. Edward P. Davis sailed for Europe, August 25.——Dr. James P. Hutchinson, who has been spending the summer abroad, will return home the end of September.——Dr. J. C. McCracken, who went to China last December to help found a medical school and hospital in Canton under the auspices of the University of Pennsylvania, has returned to this country. He will assist in the dedication of the new University Settlement House in this city and will then deliver a series of lectures to raise funds for the Canton Medical School.

Health Report.—The total number of deaths for the week numbered 481, a decrease of 17 from those reported last week and an increase of 44 over the number reported in the corresponding week of last year. The principal causes of death were as follows: Typhoid fever, 12; whooping-cough, 17; scarlet fever, 3; diphtheria, 4; tuberculosis, 58; cancer, 22; apoplexy, 15; heart disease, 25; acute respiratory diseases, 24; diarrhea and enteritis, 90; appendicitis, 4; Bright's disease, 43; congenital debility, 18; senility, 4; suicide, 6; traumata, 8; accidents, 9, and marasmus, 9. There were 149 cases of contagious disease reported, with 19 deaths, as compared with 189 cases and 19 deaths reported for last week.

SOUTH DAKOTA.

Epidemic of Typhoid.—More than 100 persons are reported to be seriously ill with typhoid fever at Bristol, Andover and Webster, and five deaths are reported.

New Hospital at Yankton.—A number of Yankton businessmen held a meeting August 3, with Bishop O'Gorman at the Sacred Heart Hospital and reported progress on the new hospital project.——The Good Samaritan Association has been incorporated with a charter in perpetuity. Money for the erection of the hospital is to be secured through the issuance of 5 per cent. bonds, of which $50,000 worth are to be issued at once, redeemable in five, ten, fifteen and twenty years. In 1927 the hospital is to be turned over to the Benedictine Sisters.

TENNESSEE.

Health Crusade.—The Humboldt Medical Society has prepared a pamphlet on the laws of health which contains a series of articles on hygiene and sanitation for use in the city schools. A copy of this pamphlet is ordered to be placed in the book of every child attending school.

New Building for Academy.—The members of the Nashville Academy of Medicine at its meeting August 15, subscribed about $8,000 toward a new building to be used as a permanent home for the organization. About $20,000 is needed for this purpose.

Personal.—Dr. N. F. Raines, Memphis, has been appointed president of the Shelby County Board of Health.——Mr. Laurent Brown has been appointed lecturer of medical jurisprudence in the Medical Department of the University of Tennessee, Nashville.——Dr. George St. John, Knoxville, has been appointed physician at Bushey Mountain prison.——Dr. Henry J. Kelso, Knoxville, was thrown from his buggy August 4 and sustained a fracture of the leg below the knee.——Dr. Louis Leroy, Nashville, state bacteriologist, has accepted the chair of principles and practice of medicine in the College of Physicians and Surgeons, Memphis.

TEXAS.

Personal.—Dr. Nathaniel Cass, Cameron, who was operated on for appendicitis July 29, has recovered from the operation, but is now suffering from pneumonia.——Drs. Henry B. Decherd, William E. Howard, Scurry L. Terrell, Albert Wilkinson, Robert S. Yancey and John O. McReynolds, have been appointed medical inspectors of the Dallas Board of Education; Drs. Edwin J. Reeves, I. S. Kahn and George W. B. Swain have been appointed as an advisory board and Dr. Frank J. Hall has been appointed to act in conjunction with the advisory board.

District Society Meets.—At a meeting of the Central Texas District Medical Association, Dr. I. Newton Suttle, Corsicana, was elected chairman, and Dr. James W. Miller, Hillsboro, secretary of the section on surgery; Dr. Jesse B. Shelmire, Dallas, chairman, and J. Walter Torbett, Marlin, secretary of the section on practice of medicine; Dr. Leonard Keplinger, Waxahachie, chairman, and Dr. Burt L. Scott, Waco, secretary of the section on eye, ear, nose and throat and Dr. Oliver J. Halbert, Waco, chairman, and W. L. Crosthwait, Holland, secretary of the section on obstetrics and gynecology. Waco was selected as the next place of meeting.

VIRGINIA.

Punished for Selling Cocain.—James Hill, colored, Richmond, has been sentenced to serve a term of imprisonment of one year for selling cocain.

Personal.—Dr. Anna Moon Randolph, Newport News, is suffering from septicemia, resulting from an operation wound. ——Dr. Ernest Woolfolk, Thornhill, is ill and is undergoing treatment at the Memorial Hospital, Richmond.

Election.—At the annual meeting of the Augusta County Medical Society held in Staunton, August 8, the following officers were elected: Dr. John W. Freed, Hermitage, president; Drs. J. C. Alexander, Mount Solon; Walter S. Whitmore, Mount Sidney, and William C. Roller, Mint Spring, vice-presidents; Dr. Thomas M. Parkins, Staunton, treasurer, and Dr. Marshall J. Payne, Staunton, secretary.

WASHINGTON.

Typhoid Fever Diminishing.—The health officer of North Yakima, in his report for July, says that less than 12 cases of typhoid fever have been reported to him since last April, whereas, during the month of July, 1905, 54 cases were on record; and he believes the city to be in excellent sanitary condition.

License Revoked.—An order of the State Board of Medical Examiners has been filed in the office of the County Clerk of King County revoking the license of James Stewart of Seattle for unprofessional and dishonorable conduct. Stewart was charged with having attempted to bribe a member of the board with $600 to procure a set of the questions to be propounded at the examination. He was convicted in July, 1902, and appealed to the Supreme Court, which a year later affirmed the decision of the lower court.

WEST VIRGINIA.

Personal.—Dr. John G. Pettit, Clay, has been elected assistant at the West Virginia Hospital for the Insane, Weston.——Dr. George W. Daniels, Gerrardstown, was nearly stung to death by a swarm of infuriated bees a short time ago. He is now out of danger.——Dr. Charles B. Williams, Philippi, is ill with typhoid fever.

Poison Regulations.—An ordinance recently enacted by the city council of Charleston provides that no person shall sell except to dealers any poisonous drug or substance except when prescribed by a physician or when the purchaser has first been furnished with a written permit from the board of health. The enforcement of this ordinance is being strenuously opposed, it is said, by the druggists, who claim that it prohibits the sale of disinfectants and fungicides and the common household liniments, and is in conflict with the state law. At a meet held July 7 they resented the report that their opposition to the measure was due to a desire to profit from the sale of narcotics.

GENERAL.

Electrotherapeutists To Meet.—The sixteenth annual meeting of the American Electrotherapeutic Association will be held at the College of Physicians, Philadelphia, Sept. 18-20, 1906. Transportation is to be on the certificate plan at the rate of a fare and a third. The headquarters will be at the Hotel

Flanders, Fifteenth and Walnut streets. Dr. G. Betton Massey, 903 Professional Building, Philadelphia, is chairman of the committee of arrangements.

Negro Medical Association.—The eighth annual meeting of the National Medical Association of Negro Physicians and Surgeons of the United States was held in Philadelphia August 21-23. The association has a membership of over 2,000, and more than 500 delegates were present. The following officers were elected: Dr. Nathan F. Mossell, Philadelphia, president; Dr. George W. Cabannis, Washington, vice-president; Dr. John A. Kenney, Tuskegee, Ala., secretary; Dr. A. Wilberforce Williams, Chicago, treasurer; and Dr. Peter A. Johnson, New York City, chairman of the executive committee. The next meeting will be held in Baltimore in August, 1907.

Southern Tri-State Society to Meet.—The eighteenth annual meeting of the Tri-State Medical Society of Alabama, Georgia, and Tennessee will be held at Chattanooga, Tenn., Oct. 2-4, 1906. Reduced rates have been granted for Alabama, Georgia, Tennessee, Mississippi, Louisiana and Florida. The preliminary program includes an excellent list of papers from leading medical men of the south. As mentioned elsewhere, strong pressure will be brought to bear to convert this organization into a branch of the American Medical Association, the Association of the Southeastern States. Further information and places on the program may be obtained from the secretary, Dr. Raymond Wallace, Chattanooga, Tenn.

Health Report of the Isthmus for July.—In his report for July, Colonel Gorgas states that it is now eight months since a case of yellow fever occurred in Panama. During the month there were thirty-three cases of smallpox at Colon, with one death. The disease was introduced in the person of a child from Cartagena. With one or two exceptions the cases all came from one focus. The last case was reported July 29, and from that date till August 17 (the date of the report) no new cases had been discovered. Colonel Gorgas believes that the outbreak has been controlled and states that its prompt extinction was due to the energetic efforts of Dr. Wheeler, the health officer, and those who assisted him. The small death rate was due to the care given the sick by the superintendent of Colon Hospital and the officers under him. Among the 28,000 employés there were 151 deaths. Of these, 13 were among the 5,000 whites and 138 among the 23,000 blacks, giving the blacks more than double the death rate of the whites. Pneumonia caused the largest number of deaths; the next disease in point of mortality was malaria. In referring to the published reports that the death rate among the negroes is due to too much sanitation, Colonel Gorgas states that in his opinion this statement is erroneous. The obvious cause for the large death rate, he says, is seen in the very bad sanitation of their lives. They seldom possess a change of clothing, and when they reach home in the evening their clothes are soaked. They go to bed, sleep soundly, and as the air gets cold the men become thoroughly chilled. In general, the men feed themselves, and as they are improvident they do not give themselves nearly enough food. This, Colonel Gorgas believes, is sufficient to account for the prevalence of pneumonia among the negroes. The Canal Commission, he states, is endeavoring to remedy these faults, and when corrective measures have been put into effect the mortality from this cause will decrease.

CANADA.

Congress of French-Speaking Physicians of America.—The fourth congress of the French-speaking physicians of North America will be held at Quebec in June, 1908, on the occasion of the celebration of the three hundreth anniversary of the founding of Quebec by Samuel de Champlain in 1608. The congress will be presided over by Dr. A. Simard, with H. Hervieux as vice-president; Lanoix, vice-president for the United States, and Siroix, vice-president for the rural districts; A. Paquet, secretary general, and F. X. Dorion, one of the governors of the College of Physicians and Surgeons, the treasurer. The third congress recently closed its sessions at Trois-Rivières with an attendance of about 300, and more than 120 scientific communications on the program. Dr. Normand presided and Dr. C. Deblois proved an able secretary. A handsome medal was presented to the congress on behalf of the scientific societies of France, some of which were represented by special delegates. H. Triboulet was the official delegate of the French government and R. Proust of the University of France, while A. Loir represented a French scientific society. J. Ahern's communication on "Chorio-epithelioma" is given in full in the *Bulletin Médical de Quebec* for July. He describes 3 cases. The patients were 19, 44 and 30 years old. Cough and blood spitting were prominent symptoms in these cases. All the patients had had from 2 to 12 pregnancies, some of them terminating in abortion or premature delivery. The third patient had passed through 5 pregnancies and one recent abortion at four months, and when first seen was coughing and spitting blood, with much icterus and much weakness and emaciation. The case was diagnosed as chorioepithelioma with metastases in vagina, liver and lungs, but no autopsy was allowed. No operation was attempted and the patient succumbed in ten days. There was no history of a preceding mole in this case, as in the 2 others. Laurendeau of Brandon reported a case in which he had performed "extramedian symphyseotomy," hebotomy or pubiotomy as the operation for enlarging the pelvis by lateral section of the pubis is variously denominated. It was the first operation of the kind done in Canada, and proved eminently successful.

FOREIGN.

New Hospital for Belfast.—The new fever hospital for Belfast was formally opened August 2. This is said to be one of the best designed and equipped of its kind in the world.

Proposed Restriction of Marriage in Roumania.—The *Deutsche med. Wochschr.* refers to a decree whose adoption is now being discussed in Roumania, to prohibit marriage to persons suffering from incurable syphilis, pulmonary phthisis or epilepsy.

Smallpox in Central America.—Acting Assistant-Surgeon Layton reports that smallpox exists in Bluefields. Passengers leaving for Mobile have been vaccinated. The local governor assured Dr. Layton that he would appoint a board of health to take full charge of the situation. The situation is a serious one and local conditions all favor the rapid spread of the disease.

Collective Research on Appendicitis in Europe.—The Paris Académie de Médecine and the Berlin Verein für innere Medecin have each been devoting several sessions to a discussion of questions regarding appendicitis. Statistics show that the number of cases and the mortality from appendicitis are increasing in continental Europe. The German imperial authorities have now appointed a committee to undertake a collective investigation on the subject. It consists of eight members, the majority members of the Berlin society mentioned above.

Eighth International Congress of Otology.—This congress was to have been held at Budapest in 1908, but it has been postponed one year. This has been done because the next international medical congress is to be held at Budapest in 1909, and it has ben arranged that the congress of otology will convene as a special section for otology in the international medical congress. It will retain its autonomy, however, and be called the Eighth International Congress of Otology, as above. Prof. J. Böke of Budapest will preside, while Dr. S. Szenes is secretary general and Dr. E. Vali, treasurer.

International Tuberculosis Centralblatt.—Prof. L. Brauer of Marburg has been publishing for some time the *Beiträge z. Klinik d. Tuberkulose*, which is now in its fifth volume. He has recently commenced the publication of what he calls the *Internationales Centralblatt f. d. gesamte Tuberkulose-Literatur*. Both of the periodicals are issued by A. Stuber's Verlag, Würzburg. The *Beiträge* appear irregularly, from 3 to 5 numbers forming a volume, the price of which is 16 marks, or about $4. The *Centralblatt* is issued monthly, and the annual subscription is 8 marks, $2. O. de la Camp and G. Schröder are also interested in the publication, while the *Beiträge* has a long list of collaborators, including Schwalbe, Völker and Vulpius.

Responsibility of Hospital for Suicide of Patient.—A hospital maintained by the sisters of charity at Berlin has recently been sued for damages by the relatives of a man who jumped out of a window while delirious in pneumonia. The plaintiff stated that she had sent her husband to the hospital so that he could have better supervision than at home, but he had been left alone and he seized the opportunity to commit suicide. She claimed that the suicide could not have occurred if he had been properly watched. The hospital authorities said that close supervision all the time was impossible for the limited nursing force of the hospital, and that they had no funds to increase the nursing force. The judge held the nurse in charge of the case at the time responsible for the man's death and imposed the fine asked. It was a charity case.

The Professorship of Physiology at Glasgow University.—King Edward has appointed Dr. Diarmid Noel Paton regius professor of physiology at Glasgow University to succeed Dr. J. G. McKendrick. Dr. Paton is the son of the late Sir J. Noel

Paton, the well-known artist. *The Medical Press* states that Dr. Paton has been engaged for many years in teaching physiology in the extramural school in Edinburgh, while his position as superintendent of the laboratory of the Royal College of Physicians has proved his capacity both for carrying out original research and for inciting others to do the same. He is well-known as a distinguished physiologist, especially through his studies in dietetics and on the functions of the ductless glands; while he has also published a number of valuable researches in connection with the life-history of the salmon. Dr. Paton has been a most popular teacher in Edinburgh, the *Press* continues, and his influence for good and public spiritedness have made themselves felt in all matters connected with medical education. His training, though in the main physiologic, has brought him so much in contact with clinicians that in teaching he always emphasized the practical rather than the purely scientific aspect of physiologiy; he has never forgotten, as some physiologists are apt to do, that his pupils are going to be physicians, not physiologists.

Health of India.—Acting Assistant-Surgeon Eakins in *Public Health Reports*, states that the mortality in India from cholera is the highest recorded since 1901. The deaths from this disease number 146,339, giving a ratio of 2.93 per mille., against 1.63 in 1904, and 2.77, the quinquennial average. The mortality from plague in 1905 was the highest on record since the outbreak in 1898, the total number of deaths being 126,084, against 75,433 in the previous year, and 58,255, the average of the last quinquennium. The period of greatest prevalence was, as usual, from January to April, but the climax was reached in March, in which month alone 40,090 deaths from plague were reported. Twenty-seven districts were more or less affected by the disease, the districts which suffered most being Saran, Patna, Gya, Shahabad, Monghyr, and Calcutta. During the year rat extermination was carried on in many parts of the province, but notably in the Giridih coal fields and in Bihar. As an example of the efficacy of rat extermination the sanitary commissioner cites the instance of Jagadispur in the Shahabad district. The operations were carried on there very thoroughly, and though there was a good deal of the disease in Shahabad, Jagadispur itself enjoyed complete immunity despite the fact that a very large number of the people from other badly infected localities came to reside there. The arrangements to keep up the campaign for at least another twelve months are complete, and if, as is not impossible, a virulent and widespread epidemic occurs next winter, the places where rat extermination has been carried on will have an opportunity of demonstrating conclusively the practical results of this method of protection. During the year, 1.544 plague inoculations were performed. A total of 1,214,487 deaths was reported from "fever," the death rate from this cause representing a ratio of 24.34 against 20.49 per mille. in the preceding year, and accounting for 63.17 per cent. of the total deaths registered from different causes during 1905. Antimalarial measures, which, aimed at the destruction of mosquitoes, were tried at *Berhampore and Balasore*, and though it can not be claimed that they have as yet yielded great results, they caused a considerable reduction in the number of mosquitces and paved the way for more complete operations. Considerable activity was displayed by many municipalities in the administration of the various branches of sanitation. Inquiries were made during the year to ascertain whether filtration through sand and application of sulphate of copper rendered the effluent from septic tank installations bacteriologically pure. The net result of the experiments was to show that these methods. either separately or in combination, are capable of purifying the effluent, but that in practice they are likely to prove difficult in proportion to the amount of impurity in the material to be treated; and it was considered doubtful whether they would be practicable in the case of effluents of a high degree of impurity except as adjuncts to other methods of treatment. Sterilization of the effluent was then attempted by means of chlorinated lime. The experiment proved successful, and it was found that an addition of this material equivalent to 5 grains for each gallon of effluent rendered the fluid virtually sterile. The sanitary commissioner reports that septic-tank latrines are an entire success when used for communities such as mills, large schools. railway workshops, and the like. and he is now considering whether or not they can be adapted to municipal towns. He will be asked to submit a report embodying the results of his experiments. The sanitary commissioner has also made a number of suggestions for the adoption in municipalities of the septic-tank method as a

Pharmacology

Somnos.

Under the caption "The Chemistry of Chloræthanal"* the following has appeared in some of the drug journals for August:

An abstract of papers from *The Journal of the Illinois Medical Society* for February 14, 1906, seems to be going the rounds of the pharmaceutical and medical press. It contains among other papers one by Prof. Julius Stieglitz, Ph.D., entitled "The Problem of the Synthetic Chemical Compound," read at the "Symposium on Proprietaries" of the Illinois Medical Society. In reference to one of the products of our house the author says: "It bears in its description the statement that it is a compound of chloræthanal with a higher polyatomic alcohol, which is true. To a chemist. that spells at once chloral combined with glycerin. What physician who would hesitate about prescribing chloral would not like to use his own judgment as to whether chloral *plus* glycerin would be any safer?"

To use his own judgment on such a subject intelligently, a physician should know the nature of the compound formed by adding chloral to glycerin, just as he would in deciding in regard to prescribing a product formed by combining potash with bromine. If not informed regarding the chemistry of the latter subject he might think that potash and bromine, both being dangerous poisons, would be only the more poisonous when combined. The physician posted on the subject would, however, recognize the compound as potassium bromide. In a similar manner, a physician not knowing that the product resulting from the reaction between equivalent amounts of chloral and glycerin is a definite chemical compound, differing chemically, physically, physiologically and clinically from chloral. might hesitate about prescribing it because of fear that it was chloral dissolved in glycerin.

Inasmuch as the statement relerred to gives an entirely erroneous idea and implies that the preparation is simply a solution or mechanical mixture of chloral and glycerin, we submit the following:

The reaction which occurs when chloræthanal—trichloraldehyde or chloral—and a higher polyatomic alcohol—the trihydric alcohol $C_3H_5(OH)_3$—or glycerin, are added together, in proper equivalent proportions, produces the chemical compound, trichlorethidene propenyl ether. This reaction was studied and reported by Louis Henry, a celebrated chemist of Louvain, Belgium, as long ago as 1874 (see *Berichte der Deutschen chemischen Gesellschaft*, VII (1874, p. 762). The result of the reaction is a definite chemical compound (trichlorethidene propenyl ether), which, when heated somewhat above 40 degrees C. (104 degrees F.) decomposes into its original components, chloral and glycerin.

The heat developed on admixture of these two substances, the physical properties of the resultant product, and the physiological effects, all prove that the product is a new compound differing in marked degree from chloral. The symbolic formula for this new compound is $C_9H_{11}O_6Cl_3$.

Trichlorethidene propenyl ether is a hypnotic belonging to the methane group. It consists of a viscid mass, or solidified jelly. which will not flow on inverting the container. It can be softened and made to liquefy by heating, or can be changed to a brittle solid on chilling by a freezing mixture, thus differing in its physical condition from either of its original components by being more solid than either. *This proves the formation of a chemical compound* as distinguished from a mere mixture, which would have the tendency to lower the freezing point instead of raising it. as here effected.

What has caused chemists who have made a superficial examination to reach the wrong conclusion that no definite compound is formed has been the fact that when overheated this trichlorethidene propenyl ether is again reverted *into chloral and glycerin.*

Our elixir (Somnos) contains in each 16 Cc. 1.2 Gm. of a concentrated (72 per cent.) trichlorethidene propenyl ether solution in glycerin. When 10 Cc. of this elixir is injected into the veins of a dog, or other animal, the immediate effect is no greater than the effect of injecting the same amount of normal salt solution in the same way; and not until total doses corresponding to twenty times that prescribed are injected does the blood pressure show any permanent fall, or decrease in respiration, and these phenomena are no greater than are characteristic of normal sleep.

Enormous doses are required to produce a lethal effect on animals. corresponding to at least 15 fluidounces of the elixir injected into the veins of a 150-pound man. Sixteen fluidounces of the elixir has been taken by mouth with suicidal intent, and nothing resulted except a long-continued normal sleep, frim which the patient awakened refreshed.

The action of trichlorethidene on the blood is practically negative. This is in great contrast to chloral, which reduces the red blood cells on an average of 32 per cent. It does not reduce hematin, as it was impossible to find hæmatoporphyrinaria in a single case of the many in which it was tested; neither have we had any reports of it doing so.

We are claiming that the product is safer than any known hypnotic; that it produces normal sleep, is less depressing than the bromides and absolutely without any untoward effect upon the heart, respiration and vasomotor centers or the blood. In this we are amply justified by the results of physiological test and clinical experience.

---

* Chloral is a trichlorin derivative of the aldehyde derived from ethyl (æthyl) alcohol and therefore is called trichlorethanal, that is trichlor. indicating that the compound contains three atoms of chlorin, ethan referring to its derivation from ethane or ethyl alcohol and the ending al denoting that it is an aldehyde. Compounds containing one and two chlorin atoms, monochlorethanal and dichlorethanal, are known, but since the compound containing three chlorin atoms is the only one in common use the term chlorethanal is applied to chloral, the prefix tri- being understood. The title, therefore, reads in plain language: "The Chemistry of Chloral."

Therefore, in answer to Professor Stieglitz' question. What physician who would hesitate about prescribing chloral would not like to use his own judgment as to whether chloral *plus* glycerin would be any safer? we unhesitatingly reply: Chloral is conceded to be the most desirable hypnotic known, but owing to its untoward action is unsafe. Trichlorethidene propenyl ether, as prepared by us in the form of elixir (Somnos), possesses all the desirable properties of chloral, but so far as known is free from its untoward effects. Physicians who know this to be the case (and a large and increasing number do know it) prescribe the product in preference to any other hypnotic, and their use of it is founded upon judgment and discretion.

Honest criticism never hurts, but facts half stated, or at least so stated as to lead to erroneous criticism, are unfair, and for that reason we have given the above full information. Very truly yours,

H. K. Mulford Company.

The quotation which calls forth the above letter is from a paper read by Professor Stieglitz in the symposium on "Nostrums," before the Chicago Medical Society—not the Illinois State Medical Society as stated—and published in The Journal of the American Medical Association, May 5, 1906.

The evident intent of Prof. Stieglitz' paper was to show by a concrete example, without mentioning specifically the name of the article, how the glamor of the production of a synthetic had led a prominent and reputable firm to mystify the profession by the use of chemical terms, unintelligible to the mass of the profession, in describing a simple combination of well-known drugs.

Somnos is a proprietary preparation put out by the H. K. Mulford Company, as a:

"Definite chemical product formed by the synthesis of chloræthanal with a polyatomic alcohol radical."

On the label Somnos is stated to be

"A reliable and safe hypnotic and cerebral sedative, free from depressing effects upon the heart, respiration, vasomotor centers."

In the advertisements we are told that:

"Somnos contains no chloral nor paraldehyd and is absolutely free from any depressing action upon the heart or circulation, and has no destructive influences on the red corpuscles of the blood, nor does it cause gastric disturbances by continued use."

It may possibly be unnecessary to suggest that, stripped of all technical verbiage the H. K. Mulford Company acknowledges that Somnos is an unstable compound of chloral and glycerin, and so unstable that it separates and becomes a simple mixture at 104 F. To put it in different words, the firm states that Somnos is a compound of chloral and glycerin and not a mixture, since a chemical union takes place between the two drugs. By referring in the above letter to the work of Henry, the H. K. Mulford Company acknowledges, unintentionally, probably, that this idea of uniting chloral with glycerin is not oriignal with that company. In parentheses it may be said that many attempts have been made in the past to produce compounds of chloral which would not depress the heart; these have all been failures. As Fraenkel states ("Arzneimittel Synthese," second edition, p. 444) compounds of this sort are either so permanent that the chloral effects are lost altogether, or else the chloral is so readily set free that the compound possesses no advantage over the drug. As stated below, experiments show that this is true with the Mulford preparation.

Heretofore the literature did not contain a word to indicate whether Somnos was "chloræthanal alcoholate" or a solution of chloral and glycerin. As a matter of fact it appears to be an elixir containing between 5 and 6 per cent. of the unstable compound of chloral and glycerin. And yet physicians were asked to compare the toxicity of this solution with the undiluted chloral. Even now the attempt to mystify is persisted in. If it really was the intention of the H. K. Mulford Company to tell just what Somnos is, then the amount of chloral represented by a given amount of Somnos would have been stated and not: "Our elixir (Somnos) contains in each 16 Cc. 1.2 Gm. of a concentrated (73 per cent.) trichlorethidene propenyl ether solution in glycerin." We do not hesitate to say that there is not a physician, unless he is also an expert chemist, who could calculate from the data given the amount of chloral represented by a dose of Somnos.

Nearly a year ago, the Council on Pharmacy and Chemistry took up this preparation, Somnos, and chemical examinations revealed that it was a combination of glycerin and chloral, probably a non-stable chemical compound easily separating by heat. Correspondence regarding the matter took place between the Council and the H. K. Mulford Company, without any satisfactory conclusions being reached. The sub-committee having become satisfied regarding the composition of Somnos, namely that it is an unstable compound of chloral and glycerin, proceeded to an investigation by animal experimentation of the claims made by the H. K. Mulford Company regarding its therapeutic effects and safety. While the report has not yet been submitted to the Council, we are informed by those who have conducted the experiments that the results of the experiments show conclusively that the physiologic effects of Somnos are practically identical with those of an elixir of chloral of corresponding chloral strength; respiration, circulation and temperature were equally depressed by the two.

It is to be regretted that when the H. K. Mulford Compa introduced this preparation the firm did not state what now has been forced to state. It is more to be regrette however, that the facts are not now presented in plain language easily understood and not in terms unintelligible except to chemists. Further, why did not the H. K. Mulford Company state exactly how much chloral is represented in a dose of Somnos as marketed, and leave it to those who use it to say whether the same quantity of chloral in Somnos has any different effect than has the same quantity of chloral in a simple elixir?

An Endorsement of the Council on Pharmacy and Chemistry.

At the recent meeting the Pharmaceutical Association of the State of Pennsylvania placed itself on record as endorsing the efforts of the Council on Pharmacy and Chemistry of the American Medical Association. In commenting editorially on this fact, the *Druggists Circular and Chemical Gazette* says:

> Some of the druggists have not been able yet to see the "ultimate gain" to their profession to grow out of the putting down of fraud and deceit in medicine, but light is dawning on more and more of them all the time. The question will be settled when it is settled right—which it will be one of these days. Both in and out of medical circles the insolence of strongly intrenched but unworthy interests is giving way to fear, which in turn will be followed by dismay. Those who read the papers need not be told what is going on among the insurance companies, railroad corporations, the beef packers, and the "bad" trusts generally, and the same kind of revulsion has been stirred up against the evils of the proprietary medicine men. The latter, aided by the "red-clause" portion of the press and such other influences as it can control or buy off, are making a desperate fight, but as the public becomes better and better informed, the fraudulent nostrum army must continue its retreat.

Bile Beans.

In The Journal, Nov. 25, 1905, page 1676, we referred at some length to this nostrum and to the judgment given against it in a British court. A sequel to this appears in the *British Medical Journal*, July 28, from which we quote:

> The second division of the court of session (four judges) at Edinburgh gave judgment on Friday, July 20, in an appeal against a judgment in the outer house, in which the Bile Bean Manufacturing Company, Limited, Greek street, Leeds, sought to interdict an Edinburgh chemist from selling under the name of "Bile Beans" any pills or other articles not made or supplied by the complainers. Interdict was refused in the outer house and the second division adhered to this judgment. The lord-justice-clerk said the bile beans of the complainers were said to be made of Australian vegetable substances discovered by a Charles Forde. The place of the discovery, the mode of it, and the instrument of it were all deliberate inventions, without any foundation in fact. The story was that Charles Forde, who was described as a skilled scientist, had noted the fact that the natives of Australia were free from bodily ailments, and that after research and investigation he had ascertained that that immunity was obtained by the vegetable substances. All that, in every particular, was false. There was never such a person as Charles Forde, and there was no eminent scientist engaged in such research in Australia. The truth was that the complainers had formed a scheme to palm off on the

public a medicine obtained from America, and they created a demand by flooding the country with advertisements, placards, pamphlets, and imaginary pictures. The complainers desired protection for the name "Bile Beans," but being themselves engaged in perpetrating a fraud on the public, they were not entitled to any such protection.

An Instance of the "Patent-Medicine" Habit.

Dr. J. C. Davis, Rochester, N. Y., reports the following interesting case of "patent-medicine" addiction:

"Mrs. Lottie Shaal died, July 10, from an overdose of 'a narcotic of some kind.' The coroner waived an autopsy as the woman was addicted to the 'patent-medicine' habit.

"During the past year she had been taking Cox's Headache Powders, obtained from her grocer. On July 7 she took one box of Cox's Headache Powders; on July 8 a part of a bottle of Hostetter's Bitters, and all of one bottle of Lydia Pinkham's Compound; on the morning of July 9 she went to see a neighboring physician, who gave her a small powder to quiet her nerves. I was unable to ascertain its contents. About noon she went out again and must have got advice or medicine, for she returned home and went to bed. Her two daughters noticed her peculiar actions, and in trying to undress her, discovered a small vial in her stocking. Mrs. Shaal pleaded with them not to disturb her—that she would not take any more. They let her alone for a short time and she got up and must have taken the contents, and have thrown away the bottle, for they have been unable to find it anywhere about the house.

"About 4 o'clock she was taken to St. Mary's Hospital with symptoms of some narcotic and spinal stimulant, and died the next morning, July 10."

Correspondence

Ethyl Chlorid As a General Anesthetic in Minor Operations.

New York, Aug. 22, 1906.

To the Editor:—I noticed an article with the above title in The Journal, August 18, by George F. Hawley, M.D. I desire to call attention to the fact that the inhaler referred to was devised by me for ethyl chlorid narcosis, and has been used by the medical and dental professions for at least three years. He appends the name of "Apperson" to the inhaler, when it is and should be called the antidolorin inhaler, devised by Maurice Green, D.D.S.

No doubt Dr. Hawley has been misinformed or misled, and in proof of my statement I enclose reprints of several articles I have written in the past on this subject, in which are cuts identical to the one used by him.

I do not look for any special credit as the inventor of this device, but I do object to any one taking undeserved credit, or probably imposing on the profession by attaching his name to any apparatus or instrument wrongfully.

Maurice Green, D.D.S.

We submitted the above letter to Dr. Hawley, who writes:

Chicago, Aug. 27, 1906.

To the Editor:—The mask mentioned in my article was represented to me as "Apperson's Mask." Having no reason to question the statement and not being acquainted with the mask of Dr. Green, I used this name in my article. I do not wish to place credit where it is not due, however, and I am, therefore, obliged to Dr. Green for setting me right in the matter.

George F. Hawley.

Interstate Reciprocity and Frauds in Medical Schools.

San Francisco, Aug. 23, 1906.

To the Editor:—In the discussion of the perplexing problem of interstate reciprocity one important phase of the question has apparently been totally overlooked: the necessity of the coöperation of examining boards in the investigation of medical colleges. Forgetful of the fact that the origin of examining boards is directly traceable to the fraudulent acts of medical colleges, boards authorized by law to go behind diplomas are notoriously prone to accept diplomas as *prima facie* evidence of regular and complete college work.

Thus the erudite secretary of the Michigan board writes that in all his career he has never had occasion to reject a diploma from a recognized medical school. Thorough investigation of credentials entails no small amount of labor, but it has already demonstrated that colleges violate the rules contained in their own published announcements and graduate students in violation of the state laws. Repeated rejections of diplomas secured under fradulent conditions has not cured the evil, at least in California, for similar frauds are recurring. The possessors of such diplomas, nevertheless, are beginning to seek new fields. They apply for examination or registration in other states, where their credentials are often accepted without question. Now, were California to reciprocate with these states it would, *volens non volens*, open the door to all such medical bandits, thus defeating the purpose of the law. Surely reciprocity under these conditions can not be founded on justice.

As a specific example of the detection of fraud in applications for license, we cite the following, taken from the official records of the California board:

May 17, 1906, H. R. Painton graduated from the Medical Department of the College of Physicians and Surgeons, San Francisco, and was given a diploma duly signed by Dr. Winslow Anderson, president, and Dr. D. A. Hodghead, dean of said college. July 31, in the office of the State Board of Medical Examiners, H. R. Painton filed his application for a license. In his affidavit mention is made of four consecutive annual courses at the above mentioned school, 1902 to 1906. Inspection of the annual announcements of the College of Physicians and Surgeons showed H. R. Painton's name in four different numbers, thus corroborating the applicant's sworn statement.

Further research, however, developed the following facts: H. R. Painton taught in the grammar school of a neighboring county from 1902 to 1904, i. e., his term of service in the capacity of teacher coincided exactly with the first two years of his alleged attendance at the College of Physicians and Surgeons, San Francisco. Confronted with the above evidence, H. R. Painton admitted having filed a false document, and gave his college attendance as only two courses. The value of H. R. Painton's faculty-bedecked diploma is *nil* in California, but past experience authorizes me to assert its par value in any other state. There, the fradulent product of the no less culpable College of Physicians and Surgeons, San Francisco, will undoubtedly become a stanch advocate of interstate reciprocity.

It may be asked why California recognizes schools proved guilty of fradulent acts. The answer is found in its medical law which authorizes the board to pass on applications and not on colleges.

Two remedies suggested themselves in dealing with frauds in medical colleges: 1. The investigation of colleges by national societies, such as the Association of American Medical Colleges, whose standard has already been recognized by the legislature of seven states and territories, or the medical council of the American Medical Association, whose functions are merely advisory. 2. The coöperation of examining boards in investigating the preliminary educational credentials and the college work of all applicants for license.

In conformity with the latter suggestion the credential committee of the California board has requested that it be notified of all applications for license filed with other state boards by graduates of California colleges.

Dudley Tait.

Insurance Examination Fees.

New York, Aug. 16, 1906.

To the Editor:—In The Journal, August 11, appears an editorial in regard to life insurance fees which is evidently intended to be a fair and conservative statement of the case from your point of view. While conceding the fairness of spirit manifested in the general tenor of your remarks, I can not refrain from calling your attention to the misleading inferences which may be drawn from your statement regarding the effect of the general insurance bill recently enacted by the New York State Legislature.

Any physician not familiar with the facts would be more than likely to infer from your remarks that this law does not in any way affect business written outside of New York State. I presume it was far from your intention to convey such an implication, as you are doubtless aware of the following facts:

1. The companies organized and operating under the laws of New York State must comply with the law limiting the expense of procuring new business. These limitations apply to the entire business of the company, whether written in New York, Oregon, or Central Asia.

2. The companies organized and operating under the laws of other states will not be permitted to enter and to do business in New York State except under limitations identical with those imposed on the New York companies.

The American Medical Association, in appointing a committee to investigate the life insurance situation in advance of passing final judgment on the matter, acted with characteristic dignity and restraint. As your admirable journal is the organ and mouthpiece of the Association, and has assumed the responsibility of molding the opinions of the medical profession on these questions, I am sure you will desire to correct a misleading editorial allusion to a matter of such pivotal importance as the New York insurance law.

Eugene L. Fisk, M.D.
Medical Director.

[Our correspondent evidently labors under the apprehension that our readers do not know that the New York law affects all companies that operate in New York, whether New York companies or not, and we hardly thought it necessary to emphasize this point. There are insurance companies—and many of them—which are still paying the old flat rate of $5.00, and which are doing business in New York.—Ed.]

District Branches of the American Medical Association.

Nashville, Tenn., Aug. 14, 1906.

To the Editor:—Since I learned of the intention on the part of the profession of Kansas, Missouri, Oklahoma, Arkansas and Texas to organize the Southwestern District Branch of the American Medical Association, I have been waiting to see if some one else would not give expression to the opinion that such organizations should be effected immediately all over the United States. Two weeks ago I introduced the discussion of this matter at the meeting of the Nashville Academy of Medicine, and found that every member present viewed the matter as I do. They emphasized their desire for such an organization in our territory by the creation of a committee, consisting of Dr. A. B. Cooke of this city and the undersigned, to undertake the work at once. We have called a meeting for this purpose to be held in Chattanooga October 2, at 9 a. m., in the Read House. This meeting is called for the same time as the meeting of the Tri-State Medical Association. It is my opinion that the Tri-State Association will be glad to transform itself at once into the larger body, which would be named either the Southern District Branch of the A. M. A., or the Southeastern District Branch, probably the former. The states expected to send representatives to this meeting are Kentucky, Tennessee, Georgia, Alabama, Florida, Mississippi and Louisiana. It is not improbable that Kentucky will wish to join the states immediately north of her, in preference to becoming a member of the Southern District Branch. The truth underlying the necessity for these district branches is very clearly expressed in the communication of Dr. F. H. Clark in the August 4 issue of The Journal as follows: "Because of the natural limitations of the state association on the one hand, and the magnitude of the American Medical Association on the other." It must be a fact recognized by every one that the sections of the A. M. A. have grown to be so large that the opportunity for presenting papers, and even of discussing papers, has become very small, especially as concerns the younger members of the profession. If for no other reason, the district branches should be brought into existence, but of course the meetings of these district branches should be held, as provided for already in the constitution, in the fall of the year, or in the early winter, so as never to interfere in the least with the annual sessions of the A. M. A.

In this communication I do not propose to do the thinking for the profession in the various states of the union, but I do propose to make some suggestions that will put them to thinking.

1. The following states are already combined in the formation of the Southwestern District Branch, namely, Kansas, Missouri, Arkansas, Oklahoma and Texas.

2. The following states will constitute, in the near future, the Southern District Branch of the A. M. A., namely, Tennessee, Georgia, Alabama, Florida, Mississippi, Louisiana, and probably Kentucky.

3. Would it not be well for the following states to organize the Southeastern District Branch, namely, South Carolina, North Carolina, Virginia, District of Columbia, Maryland, Delaware and Pennsylvania?

4. How would this do for the Eastern District Branch: New Jersey, New York, Rhode Island, Connecticut, Vermont, New Hampshire, Maine and Massachusetts?

5. How would this do for the Northern District Branch: West Virginia, Ohio, Indiana, Illinois, Michigan—and Kentucky, should she prefer this union to the other mentioned above?

6. How would this do for the Northwest Central District Branch: Wisconsin, Minnesota, Iowa, Nebraska, North Dakota and South Dakota?

7. This for the Northwestern District Branch: Montana, Wyoming, Idaho, Washington and Oregon?

8. This for the Western District Branch: Colorado, New Mexico, Arizona, Utah, Nevada and California?

These several districts would be sufficiently large for furnishing a body of medical men that could be divided into sections for scientific work, but the sections of course should not be so numerous as those of the A. M. A. I would suggest that the following sections would be sufficiently numerous: First, Section on Practice of Medicine, Obstetrics and Diseases of Children, allowing that the practice of medicine should include nervous, mental and cutaneous diseases; second, Section on Surgery and Gynecology; third, Section on Ophthalmology, Otology and Laryngology; fourth, Section on Anatomy, Physiology and Pathology. Therapeutics would naturally fall in the first section.

I trust that if this communication does nothing more, it will at least put the profession to thinking in the direction pointed out. It is presented only in the spirit of suggestion, and not of dictation.

G. C. Savage.

The Attacks on the American Medical Association.

Detroit, Aug. 1, 1906.

To the Editor:—In traveling I meet many members of our Association and hear a good deal of criticism of the management, which pains me very much, and obliges me to defend the organization, and where there is so much talk there must be some cause for it. I also read in the journals a good deal of criticism, and can readily see how it is caused. Undoubtedly a great deal comes from the manufacturers who are financially injured by being exposed; the other comes from the independent journals who resent the statement that there is no use for their existence. In the case of the manufacturers, few will defend them, and I think everybody believes that the good work should go on and be amplified if necessary. As far as the independent journals are concerned, I certainly think there is a place for them. First, there is a place for the various special journals, then there is a place for local medical journals; in fact, I believe every journal, no matter how small, has some good in it and reaches some physician and helps him, and thus does good. Their value may be limited, but still every one does some good. Some think there are too many medical societies; still I believe not. Each one reaches some members that others do not, and thus raises these members up.

The whole thing, it seems to me, is a lack of tact on the part of those in charge of the organization. Take for instance, the Report of the Board of Trustees, as it is published in The Journal of June 16, which is all right, being read simply in abstract, but there is no reason why it should not be printed more in detail. A few pages more of printing matter costs very little more. For instance, the salary list. Why should it not be given in detail; why not state that the Secretary gets $10,000 a year? He certainly earns it. I think he earns twice as much. The members might just as well know it. Why should they not? The expenses of the organizer should be given in detail. He certainly earns it; in fact, the services he renders to the Association is worth five times as much.

I can readily see how the resolution to appoint a committee to investigate the financial condition was opposed by the Trustees, who thought it was a reflection on the management. They have the books investigated by an expert once or twice a year, and always select a different man. They know the books are all right, but the trouble is that the members do not know that. If they would, such a resolution would probably not be offered. If I were a Trustee I would not give any member a chance to offer such a resolution. I would offer it myself and I would insist that the greatest kickers should be put on that committee. That would cure them and then they would see that everything was all right, of which no member really has a doubt. Still, when such a resolution is objected to, it makes a man suspicious, and they ask why should anybody object to that? The Good Book says you must not only avoid evil, but the very appearance of evil. This a good doctrine.

It is just so with the new medical directory. Why could it not be stated exactly what was paid for the list bought by the Association and all the details? Speaking of the medical directory, that will cost probably $75,000 to get it up. With money received from a limited number of advertisements, the price ought to be reduced to about $2.00, and then every member of the Association will get one. At the most it should not cost more than $3.00.

It is such a simple thing. If all these things were known by the members there would be less criticism. The other point is the finances. The Association is growing, has a big income. We do not need to accumulate money. Why, for instance, should not every person who writes an article receive, say, 100 reprints free of charge as a good many medical journals do? If a man wants more he can pay for them and they ought to be given to him at the lowest possible figure or cost price. Why should the bound volume of the Sections cost $1.00 to the members, when the original cost is only about one-third? Why should we accumulate money in bonds and stocks? It is good to have a property of our own, the finest press, and facilities to turn out a good journal, but let us stop there. We may say we want a new building and a larger one. If we do need one, we can put up one, but do it in such a way, that from rents there will be enough to pay the interest on the building and to accumulate a sinking fund that will pay for it in twenty-five or fifty years. Why should the present members pay all that and leave the future generation a valuable property without any efforts of their own? We should be willing to do our share, but we do not need to do everything.

In fact, as the membership grows and the subscription list increases we ought to try and reduce the number of advertisements. We ought to have a journal with virtually no advertisements, and those we have should be charged a good price (just as they have been in the past); decrease the number and increase the price.

If I should be mistaken about one or the other little point, I hope the Trustees will correct me, but all around I simply want to say: Be more open and specific in your statements. Do not resent every little inquiry made, but just jolly them along. Let the independent medical journals alone. Do not charge members more than the actual cost for whatever they get. Devote more money to the chemical and research laboratory, and to establishing of a complete medical library, and give a most perfect review of every medical journal published in the world. That seems to me, should be our constant endeavor. Do not let us quarrel about such little things, but stick together for the good of the race.

J. H. Carstens.

The above letter was forwarded to Dr. T. J. Happel who sends the following reply:

Trenton, Tenn., Aug. 8, 1906.

To the Editor:—Nothing is more unpleasant to me than a controversy, for life is too short to quarrel over the little things. I have read Dr. Carstens' letter, and I regret that he has felt called on to notice the criticisms made by others in regard to the management of the affairs of the Association; yet to notice them in such a way that did one not know that he was a friend of the Association and ready at all times to uphold it, he would be considered as one of the elect who was sitting in judgment on these questions. These criticisms seem to be confined to certain localities where there are perhaps medical men who feel that they are better qualified to edit The Journal and to manage the affairs of the Association than is now being done. In various ways I come in contact with many physicians, and I have yet to find the first one, except the few disgruntled ones who were at the Boston session, who complain of the management. The criticisms on the part of the various physicians spoken of in almost every case could be referred to "a sore toe," or some other like cause of irritation.

The independent medical journals owned by physicians are usually run for profit alone, and of course the war made on unethical advertising hurts their "toe." They claim not to want to publish unethical advertisements, and yet they continue to do so for the money which they receive, and their opposition is due to the fact that The Journal has shown up the fraudulent nature of these advertisements. If they cut out these advertisements they lose money, hence they complain, but they make their journal better. There is a place for all ethically conducted private journals, and instead of The Journal, A. M. A., injuring them, it is an indirect benefit to them, for as The Journal's rate of advertising is proportioned to its circulation, the private journal will get much that The Journal can not get. Some of these journals are doing noble work, and the House of Delegates was outspoken on this subject at Boston.

While the journals already mentioned are to be commended, there are many journals sent out by and in the interest of the manufacturing chemists to laud their own products. Such as these can not be handled decently in an article limited in space, and hence, they must be ignored.

The state journals are rapidly becoming essentials in well organized medical associations. They furnish state and county medical news—reporting the proceedings of the state and county medical societies. Of course this might lessen the amount of free material for the private journals, but the private journal has no right to complain of this.

Manufacturers of some of the proprietary medicines complain because the worthlessness of many of their products has been shown up through the work of the Council on Pharmacy and Chemistry of the A. M. A. I agree with the Rev. Sam Jones in cases of such complaints, when he says that "if you throw a brick into a crowd you can tell who has been hit, because he always makes an outcry." Those who are complaining most loudly are the ones who have put on the market the worst drugs, and who may have come in contact with the "Pure Food Bill" passed by the last Congress.

However, I would have nothing to say in answer to Dr. Carstens' letter had it not been for the insinuations against the Board of Trustees. He says that there is a lack of tact on their part in the management of the affairs of the Association, and illustrates this by a reference to the report of the Board of Trustees, which he says was read "simply in abstract" (of course he means in the House of Delegates). Dr. Carstens knows, or should know, and if he was not in the House at the time the report was called for, then his friend, Dr. H. O. Walker, should have informed him, that before the report of the Board of Trustees was read, at the request of the chairman of the board, when the report was called for, instead of being read at the morning session, a copy of the report was given every

Any physician not familiar with the facts would be more than likely to infer from your remarks that this law does not in any way affect business written outside of New York State. I presume it was far from your intention to convey such an implication, as you are doubtless aware of the following facts:

1. The companies organized and operating under the laws of New York State must comply with the law limiting the expense of procuring new business. These limitations apply to the entire business of the company, whether written in New York, Oregon, or Central Asia.

2. The companies organized and operating under the laws of other states will not be permitted to enter and to do business in New York State except under limitations identical with those imposed on the New York companies.

The American Medical Association, in appointing a committee to investigate the life insurance situation in advance of passing final judgment on the matter, acted with characteristic dignity and restraint. As your admirable journal is the organ and mouthpiece of the Association, and has assumed the responsibility of molding the opinions of the medical profession on these questions, I am sure you will desire to correct a misleading editorial allusion to a matter of such pivotal importance as the New York insurance law.

Eugene L. Fisk, M.D.
Medical Director.

[Our correspondent evidently labors under the apprehension that our readers do not know that the New York law affects all companies that operate in New York, whether New York companies or not, and we hardly thought it necessary to emphasize this point. There are insurance companies—and many of them—which are still paying the old flat rate of $5.00, and which are doing business in New York.—Ed.]

District Branches of the American Medical Association.

Nashville, Tenn., Aug. 14, 1906.

To the Editor:—Since I learned of the intention on the part of the profession of Kansas, Missouri, Oklahoma, Arkansas and Texas to organize the Southwestern District Branch of the American Medical Association, I have been waiting to see if some one else would not give expression to the opinion that such organizations should be effected immediately all over the United States. Two weeks ago I introduced the discussion of this matter at the meeting of the Nashville Academy of Medicine, and found that every member present viewed the matter as I do. They emphasized their desire for such an organization in our territory by the creation of a committee, consisting of Dr. A. B. Cooke of this city and the undersigned, to undertake the work at once. We have called a meeting for this purpose to be held in Chattanooga October 2, at 9 a. m., in the Read House. This meeting is called for the same time as the meeting of the Tri-State Medical Association. It is my opinion that the Tri-State Association will be glad to transform itself at once into the larger body, which would be named either the Southern District Branch of the A. M. A., or the Southeastern District Branch, probably the former. The states expected to send representatives to this meeting are Kentucky, Tennessee, Georgia, Alabama, Florida, Mississippi and Louisiana. It is not improbable that Kentucky will wish to join the states immediately north of her, in preference to becoming a member of the Southern District Branch. The truth underlying the necessity for these district branches is very clearly expressed in the communication of Dr. F. H. Clark in the August 4 issue of The Journal as follows: "Because of the natural limitations of the state association on the one hand, and the magnitude of the American Medical Association on the other." It must be a fact recognized by every one that the sections of the A. M. A. have grown to be so large that the opportunity for presenting papers, and even of discussing papers, has become very small, especially as concerns the younger members of the profession. If for no other reason, the district branches should be brought into existence, but of course the meetings of these district branches should be held, as provided for already in the constitution, in the fall of the year, or in the early winter, so as never to interfere in the least with the annual sessions of the A. M. A.

In this communication I do not propose to do the thinki for the profession in the various states of the union, but I propose to make some suggestions that will put them thinking.

1. The following states are already combined in the fo tion of the Southwestern District Branch, namely, Kans Missouri, Arkansas, Oklahoma and Texas.

2. The following states will constitute, in the near futu the Southern District Branch of the A. M. A., namely, T nessee, Georgia, Alabama, Florida, Mississippi, Louisiana, probably Kentucky.

3. Would it not be well for the following states to org the Southeastern District Branch, namely, South Carol North Carolina, Virginia, District of Columbia, Maryland, D aware and Pennsylvania?

4. How would this do for the Eastern District Branch: N Jersey, New York, Rhode Island, Connecticut, Vermont, N Hampshire, Maine and Massachusetts?

5. How would this do for the Northern District Branc West Virginia, Ohio, Indiana, Illinois, Michigan—and Ke tucky, should she prefer this union to the other mention above?

6. How would this do for the Northwest Central Dist. Branch: Wisconsin, Minnesota, Iowa, Nebraska, North kota and South Dakota?

7. This for the Northwestern District Branch: Monta Wyoming, Idaho, Washington and Oregon?

8. This for the Western District Branch: Colorado, N Mexico, Arizona, Utah, Nevada and California?

These several districts would be sufficiently large for fi nishing a body of medical men that could be divided into tions for scientific work, but the sections of course should be so numerous as those of the A. M. A. I would g that the following sections would be sufficiently numer First, Section on Practice of Medicine, Obstetrics and Disea of Children, allowing that the practice of medicine should clude nervous, mental and cutaneous diseases; second, Secti on Surgery and Gynecology; third, Section on Ophthalmol Otology and Laryngology; fourth, Section on Anatomy, P ology and Pathology. Therapeutics would naturally fall the first section.

I trust that if this communication does nothing more, it at least put the profession to thinking in the direction point out. It is presented only in the spirit of suggestion, and not dictation.

G. C. Savage

The Attacks on the American Medical Association.

Detroit, Aug. 1, 19

To the Editor:—In traveling I meet many members of Association and hear a good deal of criticism of the mana ment, which pains me very much, and obliges me to def the organization, and where there is so much talk there m be some cause for it. I also read in the journals a good de of criticism, and can readily see how it is caused. Undoubte a great deal comes from the manufacturers who are financia injured by being exposed; the other comes from the independe journals who resent the statement that there is no use their existence. In the case of the manufacturers, few defend them, and I think everybody believes that the work should go on and be amplified if necessary. As far the independent journals are concerned, I certainly think is a place for them. First, there is a place for the vario special journals, then there is a place for local medical journal in fact, I believe every journal, no matter how small, has good in it and reaches some physician and helps him, and does good. Their value may be limited, but still every does some good. Some think there are too many medical s cieties; still I believe not. Each one reaches some that others do not, and thus raises these members up.

The whole thing, it seems to me, is a lack of tact on t part of those in charge of the organization. Take for insta the Report of the Board of Trustees, as it is publish in The Journal of June 16, which is all right, being

Any physician not familiar with the facts would be more than likely to infer from your remarks that this law does not in any way affect business written outside of New York State. I presume it was far from your intention to convey such an implication, as you are doubtless aware of the following facts:

1. The companies organized and operating under the laws of New York State must comply with the law limiting the expense of procuring new business. These limitations apply to the entire business of the company, whether written in New York, Oregon, or Central Asia.

2. The companies organized and operating under the laws of other states will not be permitted to enter and to do business in New York State except under limitations identical with those imposed on the New York companies.

The American Medical Association, in appointing a committee to investigate the life insurance situation in advance of passing final judgment on the matter, acted with characteristic dignity and restraint. As your admirable journal is the organ and mouthpiece of the Association, and has assumed the responsibility of molding the opinions of the medical profession on these questions, I am sure you will desire to correct a misleading editorial allusion to a matter of such pivotal importance as the New York insurance law.

Eugene L. Fisk, M.D.
Medical Director.

[Our correspondent evidently labors under the apprehension that our readers do not know that the New York law affects all companies that operate in New York, whether New York companies or not, and we hardly thought it necessary to emphasize this point. There are insurance companies—and many of them—which are still paying the old flat rate of $5.00, and which are doing business in New York.—Ed.]

District Branches of the American Medical Association.

Nashville, Tenn., Aug. 14, 1906.

To the Editor:—Since I learned of the intention on the part of the profession of Kansas, Missouri, Oklahoma, Arkansas and Texas to organize the Southwestern District Branch of the American Medical Association, I have been waiting to see if some one else would not give expression to the opinion that such organizations should be effected immediately all over the United States. Two weeks ago I introduced the discussion of this matter at the meeting of the Nashville Academy of Medicine, and found that every member present viewed the matter as I do. They emphasized their desire for such an organization in our territory by the creation of a committee, consisting of Dr. A. B. Cooke of this city and the undersigned, to undertake the work at once. We have called a meeting for this purpose to be held in Chattanooga October 2, at 9 a. m., in the Read House. This meeting is called for the same time as the meeting of the Tri-State Medical Association. It is my opinion that the Tri-State Association will be glad to transform itself at once into the larger body, which would be named either the Southern District Branch of the A. M. A., or the Southeastern District Branch, probably the former. The states expected to send representatives to this meeting are Kentucky, Tennessee, Georgia, Alabama, Florida, Mississippi and Louisiana. It is not improbable that Kentucky will wish to join the states immediately north of her, in preference to becoming a member of the Southern District Branch. The truth underlying the necessity for these district branches is very clearly expressed in the communication of Dr. F. H. Clark in the August 4 issue of The Journal as follows: "Because of the natural limitations of the state association on the one hand, and the magnitude of the American Medical Association on the other." It must be a fact recognized by every one that the sections of the A. M. A. have grown to be so large that the opportunity for presenting papers, and even of discussing papers, has become very small, especially as concerns the younger members of the profession. If for no other reason, the district branches should be brought into existence, but of course the meetings of these district branches should be held, as provided for already in the constitution, in the fall of the year, or in the early winter, so as never to interfere in the least with the annual sessions of the A. M. A.

In this communication I do not propose to do the thinking for the profession in the various states of the union, but I do propose to make some suggestions that will put them to thinking.

1. The following states are already combined in the formation of the Southwestern District Branch, namely, Kansas, Missouri, Arkansas, Oklahoma and Texas.

2. The following states will constitute, in the near future, the Southern District Branch of the A. M. A., namely, Tennessee, Georgia, Alabama, Florida, Mississippi, Louisiana, and probably Kentucky.

3. Would it not be well for the following states to organize the Southeastern District Branch, namely, South Carolina, North Carolina, Virginia, District of Columbia, Maryland, Delaware and Pennsylvania?

4. How would this do for the Eastern District Branch: New Jersey, New York, Rhode Island, Connecticut, Vermont, New Hampshire, Maine and Massachusetts?

5. How would this do for the Northern District Branch: West Virginia, Ohio, Indiana, Illinois, Michigan—and Kentucky, should she prefer this union to the other mentioned above?

6. How would this do for the Northwest Central District Branch: Wisconsin, Minnesota, Iowa, Nebraska, North Dakota and South Dakota?

7. This for the Northwestern District Branch: Montana, Wyoming, Idaho, Washington and Oregon?

8. This for the Western District Branch: Colorado, New Mexico, Arizona, Utah, Nevada and California?

These several districts would be sufficiently large for furnishing a body of medical men that could be divided into sections for scientific work, but the sections of course should not be so numerous as those of the A. M. A. I would suggest that the following sections would be sufficiently numerous: First, Section on Practice of Medicine, Obstetrics and Diseases of Children, allowing that the practice of medicine should include nervous, mental and cutaneous diseases; second, Section on Surgery and Gynecology; third, Section on Ophthalmology, Otology and Laryngology; fourth, Section on Anatomy, Physiology and Pathology. Therapeutics would naturally fall in the first section.

I trust that if this communication does nothing more, it will at least put the profession to thinking in the direction pointed out. It is presented *only in the spirit of suggestion, and not of dictation.* G. C. Savage.

The Attacks on the American Medical Association.

Detroit, Aug. 1, 1906.

To the Editor:—In traveling I meet many members of our Association and hear a good deal of criticism of the management, which pains me very much, and obliges me to defend the organization, and where there is so much talk there must be some cause for it. I also read in the journals a good deal of criticism, and can readily see how it is caused. Undoubtedly a great deal comes from the manufacturers who are financially injured by being exposed; the other comes from the independent journals who resent the statement that there is no use for their existence. In the case of the manufacturers, few will defend them, and I think everybody believes that the good work should go on and be amplified if necessary. As far as the independent journals are concerned, I certainly think there is a place for them. First, there is a place for the various special journals, then there is a place for local medical journals; in fact, I believe every journal, no matter how small, has some good in it and reaches some physician and helps him, and thus does good. Their value may be limited, but still every one does some good. Some think there are too many medical societies; still I believe not. Each one reaches some members that others do not, and thus raises these members up.

The whole thing, it seems to me, is a lack of tact on the part of those in charge of the organization. Take for instance, the Report of the Board of Trustees, as it is published in The Journal of June 16, which is all right, *being read*

delegate, and to every one who was in the house at that time, with the request that before the House of Delegates reconvened for the afternoon session it should be carefully examined, to the end that when read, any and all members in the house might call for any information desired, not fully set forth in the report. At the afternoon session of the house, after several other matters had been disposed of, "The Report of the Board of Trustees for the year ending Dec. 31, 1905," was called for. Under the direction of the board this report was presented by the chairman. He read carefully and deliberately every part of the report that was deemed of sufficient importance to demand any special comment. As the financial part of the report was printed in detail, except an itemized statement of salaries, and the expense account of the organizer, Dr. McCormack; the receipts and expenditures were not read singly, but the sum total of each was stated, and then a few of the larger items read—the page of the report being called in every case as the reading progressed. These debit and credit tables were prepared by an auditing company of Chicago, chartered under the laws of Illinois, having no interest in the result of its examination; its sole object being to investigate the books and vouchers and accounts of The Journal office, and of the Treasurer. In order to refresh the memories of Dr. Carstens and of others who take the same view that he does of the work of The Journal office and of that of the Board of Trustees, I copy from The Journal, June 16, the last clause of the report of the Investor Audit Company, which examined the books for the Board last January:

> We have examined, properly approved and receipted vouchers for all expenditures, with the exception of a few which had not been returned by the bank at the time of our visit. We shall audit same on our next visit to the office of the Association. We counted the cash on hand and verified the cash in bank with statements furnished us by the bankers. The securities in possession of the Trust Company were examined and found to be intact. In addition to the above, we have verified the footings of the cash book and made such other checks as in our opinion were deemed necessary for the protection of the Association.
>
> Considering the amount of detail handled by the Accounting Department, we found the work to be in excellent condition. There appears to be a continued improvement in the manner of handling the accounts and office work.
>
> We will be pleased to furnish you with any other information that you may desire. Yours faithfully,
>
> E. M. Mill, Manager.

Dr. Carstens complains that the salary list was not printed in full in the report. Such a list never appears in the report of any well-managed business association. The Board of Trustees, recognizing the right of every member of the House of Delegates and of any member of the Association to such information, carried to the session a sheet having every item on it, from which to read anything asked for. We did not feel that it was necessary to publish to the world the amount paid the editor and the 150 to 175 other employés, including the girls engaged by the hour in the mailing department. As was forcibly stated on the floor of the house by Dr. Montgomery, the salary of the editor was fixed, when he was elected, at $5,000 per annum, to be gradually increased in proportion to the results produced till it reached the sum of $10,000, which amount he has received since March of last year. Whether or not he has merited that amount, judge ye. The Board of Trustees thinks that he has. How well Dr. Simmons has done his work can be easily shown by reference to The Journal, July 9, 1898. The report of the Board of Trustees, made at Denver in that year, showed the total receipts of The Journal office, including $20,000 drawn from the Treasurer, to have been $47,140.07; expenses, $45,644.17, leaving a balance of less than $1,500 in The Journal office. The Treasurer's report showed a balance in his hands of $14,692.72. Ten thousand dollars of this amount was put aside for emergencies, making a sinking fund of $13,000. The weekly average issue of The Journal was then 11,470 copies, as compared with 38,000 for the year ending Dec. 31, 1905. I am glad that Dr. Carstens does not object to the salary paid our editor.

Had the full pay-roll of The Journal office been printed in the report, The Journal would have been at the mercy of any human vulture that might have desired to injure it, by attempting to entice from it any employé, by offering a few more dollars than he or she was receiving. No business man, firm, or corporation is ever guilty of such a stupendous piece of folly. Further:—the payroll is constantly changing, but all of the labor used in the mechanical and composing departments must be paid for at union rates.

In addition to the sheet containing the salary account, there was also on hand in Boston the sheet which contained the organization expense account, which was given to Dr. Coe, with permission to publish it if he wished to do so. The salary account was also put into his hands so that each and every one, whether a "kicker" or not, might read and compare, but not publish without permission of the House of Delegates. Dr. Carstens or Dr. Walker could have published the organization statement, had either of them wished to do so, for it was put in the hands of Dr. Coe to do with it as he pleased, but both report sheets were returned to the Chairman of the Board before the afternoon session adjourned. This makes it perfectly plain that the board had nothing to conceal and was wishing to conceal nothing.

The employment of Dr. McCormack as organizer since the annual session, in 1904, has been done under the order of the House of Delegates. He has been paid $5,000 a year and his expenses ever since he entered on the duties of that position. The Trustees felt one year ago that the organization had reached such a stage that this expense might be dispensed with, but on the direct request of the House of Delegates continued his services for another year, as they did again at the last session.

I am of the opinion that the House of Delegates would not have wanted to listen to the reading of a report of Dr. McCormack's traveling expenses, made up of railroad fares, board and incidentals from one place to another of his itinerary. These and similar accounts are all submitted to and passed on by the Board of Trustees, after which they go to the Audit Company. Every item of this and of all other accounts is on file in The Journal office and is open to the inspection of every member of the Association who may call at the office of The Journal. I may add parenthetically that I have had a personal experience in investigating a few business matters for friends in the office, and it was no trouble to find anything that was wanted. It always seemed to be a pleasure for the book-keeping department to look up any matter called for. The board will gladly furnish a report, covering all the itemized details of the business if the House of Delegates wishes it, and it will welcome any investigation made under the order of the House of Delegates. It is an utter absurdity to suggest an investigation of a business of the magnitude of The Journal office by a committee of physicians who are not practical book-keepers. The Board of Trustees long since abandoned any such piece of folly, and has the work done by expert accountants. Two audit companies have been employed since my connection with the board. If another investigation is wanted apart from that made by the board, then let there be selected by a committee in no wise connected with the management of The Journal a different expert accountant, and let him be sent there by the president of the Association with directions to go through the office in a systematic way and to send in his separate report to the next session of the Association. A committee of physicians would be a useless addendum to a financial investigation. Let it be understood that The Journal office and its affairs are open to the members of the Association at any time.

The organization expense account as handed Dr. Coe is as follows:

ORGANIZATION EXPENSE, 1905.

Dr. J. N. McCormack, salary	$4,999.92
Dr. J. N. McCormack, expense bill, June 13, 1904, to July, 1905	1,453.90
Drs. Ohls and Green	875.00
Express charges and postage	42.92
Expense to agents account of local society work	259.00
Jobbing	166.30
	$7,797.04

1906.

Dr. J. N. McCormack, salary, January to April, inclusive	$1,666.64
Dr. J. N. McCormack, expense bill, Sept. 4, 1905, to December, 1905	863.00
Jobbing, express, etc.	118.60
	$2,648.24

Drs. Ohls and Green are in The Journal office, but such of their time as is devoted to the work of Dr. McCormack is

The last section of Dr. Carstens' article, wherein he gives the Trustees advice, can be answered in one sentence. "Advice is the cheapest commodity on the market." This reply is written in no contentious spirit but to let the members of the Association know that THE JOURNAL force, from editor down to mailing girls, are doing their whole duty, and that the Board of Trustees is attempting conscientiously to do the work assigned them, without fear or favor.

We would add further that we welcome honest criticism, and when it is not made from impure motives (with which we do not charge Dr. Carstens, for we believe him to be a true friend to THE JOURNAL) we are ever ready to answer it to the best of our ability.

T. J. HAPPEL,
Chairman Board of Trustees.

Marriages

EDWARD C. ROSENOW, M.D., Chicago, to Miss Lydia Senty, of Arcadia, August 1.

IRA F. GOSE, M.D., Eureka Utah, to Miss Willie Sallee, of Danville, Ky., August 15.

JAMES M. COOPER, M.D., Detroit, Mich., to Miss Mattie Craft of Grass Lake, Mich., August 22.

IRVIN S. WORKMAN, M.D., Gambier, Ohio, to Miss Ruth Klinger, of Delaware, Ohio, August 14.

C. LOUIS HOEFFLER, M.D., Omaha, Neb., to Miss Marie E. Mallette, of Chelsea, Mass., August 19.

ISADOR S. TROSTLER, M.D., Orleans, Neb., to Miss Ruphelle Luce, of New Vineyard, Me., August 16.

PEDER SATHER BRUGUIERE, M.D., to Miss Nannie King, both of San Francisco, at Reno, Nev., August 20.

GEORGE HOPKINSON, M.D., Boston, Mass., to Miss Helen Wright Andrews, of Binghamton, N. Y., July 14.

WALTER REMSEN BRINCKERHOFF, M.D., formerly of Boston, but now of Honolulu, to Miss Nellie M. White, of Winchendon, Mass., at Honolulu, August 25.

Deaths

Reynaldo Juan Fitzgerald, M.D. Albany (N. Y.) Medical College, 1882; a member of the Association of Military Surgeons of the United States; surgeon of the Thirteenth Minnesota Infantry, U. S. V., and on duty with that command in the Philippine Islands; a member of the state and county medical societies; the first man to volunteer at the organization of the Minnesota National Guard in 1882, and major-surgeon in that regiment during the Spanish-American War; medical director of the Minnesota National Guard, with the rank of colonel on his return to the United States, and at the time of his death major and surgeon National Guard of Minnesota and assigned to the First Infantry; a prominent practitioner of Minneapolis, died at his home in that city, August 18, as the result of disease contracted in the Philippine Islands, aged 45.

Godfrey R. Martine, M.D. University of Vermont Medical Department, Burlington, 1862, a member of the American Medical Association; International Medical Congress, 1900; New York State Medical Association; formerly president of the Warren County Medical Society, the Tri-County Medical Society, and Warren County Medical Association, who established the Glens Falls Hospital in 1885 and was consulting surgeon for that institution; formerly coroner and health officer of Warren County; one of the oldest and most prominent physicians of Glens Falls, was struck, August 8, by a Hudson Valley Railway express car, two miles north of Glens Falls, and instantly killed, aged 69.

Charles David Hurt, M.D. University of Georgia Medical Department, Augusta, 1881; a member of the American Medical Association; ex-president of the Atlanta Society of Medicine; formerly professor of materia medica in the Southern Medical College, Atlanta; chief surgeon Georgia Railway and Electric Company; professor of therapeutics in the Atlanta School of Medicine; president of the medical board of Wesley Memorial Hospital and a member of the medical board of Grady Hospital; for thirteen years a resident of Atlanta; a Confederate veteran, died at his home in Inman Park, Atlanta, after an illness of more than eight months, August 12, aged 63.

James E. Smith, M.D. Albany (N. Y.) Medical College, 1889, and valedictorian of his class; a member of the Albany County (N. Y.) Medical Society and coroner of the county from 1890 to 1893; a lieutenant during the Spanish-American War and on duty in the Hawaiian Islands; afterward assistant surgeon of the Tenth Battalion, N. G. N. Y.; senior vice-commander of the Department of New York of the Spanish-American War Veterans, was stricken with paralysis at his home in Albany, August 13, and fell, fracturing his skull, dying at the Albany Hospital twenty-four hours later, aged 38.

Hunter P. Cooper, M.D. Medical Department of Columbian University, Washington, D.C., 1883; professor of obstetrics and gynecology in the Atlanta College of Physicians and Surgeons; gynecologist to Wesley Memorial Hospital, Atlanta; local surgeon of the Georgia Railway, Nashville, Chattanooga & St. Louis Railroad, Atlanta & Western Railway and Western of Alabama Railway; a member and ex-president of the Atlanta Society of Medicine, and a member of the Medical Association of Georgia, died at his home in Atlanta, August 24, from septicemia, aged 46.

William Octah Vance, M.D. Louisville National Medical College, 1889; Illinois Medical College, Chicago, 1895; one of the founders of the Louisville National Medical College and a professor in and member of the board of trustees of the institution; for twenty-five years principal of the colored high school in New Albany, Ind., and one of the most influential colored men of his city, died from heart disease at his home, August 16, aged 50.

Joseph W. V. R. Plummer, M.D. Southern Medical College, Atlanta, Ga., 1884; formerly surgeon in the Navy; at the time of his death city health officer of Key West, Fla., and twice mayor of that city, who had done special work in the treatment of yellow fever and other tropical diseases; some time commander of the Department of Florida in the Grand Army of the Republic, died at his home in Key West, August 8, from diabetes, after an illness of four months, aged 64.

Frank P. Grove, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1901, a member of the Medical Society of the State of Pennsylvania and of the Huntingdon County Medical Society, died at his home in Alexandria, Pa., August 20, from tuberculosis, after an illness of eighteen months, aged 30. The county medical society adopted appropriate resolutions regarding the death of Dr. Grove.

Robert J. Preston, M.D. University of Virginia Department of Medicine, Charlottesville, 1867; a member of the American Medical Association, superintendent of the State Hospital for the Insane, Marion, Va., and one of the most prominent alienists of that state, died suddenly from heart disease in New York City, August 20, while on his way to attend the meeting of the British Medical Association at Toronto, aged about 60.

Cornelius C. Beard, M.D. New Orleans (La.) School of Medicine, 1849; a veteran of the Civil War; one of the founders of the New Orleans School of Medicine and professor of anatomy in that institution; for many years a practitioner of New Orleans, died at his home in Brookline, Mass., May 15, after a prolonged illness, aged 78.

William R. Van Tuyl, M.D. Kansas City (Mo.) Medical College, 1889, contract surgeon in the United States Army during the Spanish-American War and on duty in the Philippine Islands, a prominent physician of Leavenworth, Kan., died at his home from heart disease, August 19, after a lingering illness, aged 42.

Bernardino Calabrese, M.D. University of Naples, Italy, 1861; for several years a surgeon in the Italian army and for a long time mayor of his native town of Samfele; for fifteen years a practitioner of Buffalo and official physician to the Italian consulate, died at his home, August 16, after a brief illness, aged 68.

Hugh Henry McIntyre, M.D. University of Georgetown Medical Department, Washington, D. C., of Randolph, Vt.; a veteran of the Civil War; special agent of the United States in connection with the arbitration at Paris in 1892 and 1893, died suddenly from heart disease at Barnard, Vt., August 13, aged 60.

Frederick J. Owens, M.D. Philadelphia College of Medicine and Surgery, 1853; surgeon of the First Delaware Volunteer Infantry during the Civil War; formerly a practitioner of Harrington, Del., died at his home in Denton, Md., from senile debility, August 16, aged 84.

Armstead Jackson Patterson, M.D. Jefferson Medical College, Philadelphia, 1867, a member of the Medical Association of North Carolina, died at his home in Liberty, N. C., July 5, from septicemia following a double pyonephrosis, after an illness of four months, aged 65.

O'Connor, R. P., asst.-surgeon, granted thirty days leave of absence.

Noble, R. E., asst.-surgeon, leave of absence extended one month.

Wing, Franklin F., dental surgeon, ordered to report to commanding general, Camp of Instruction near Fort D. A. Russell, Wyo., for duty.

Cass, W. E., contract surgeon, reports at Fort Worden, Wash., for temporary duty.

Wertenbaker, C. I., dental surgeon, returned to Madison Barracks, N. Y., from leave of absence.

Cutliffe, William O., contract surgeon, arrived at San Francisco, Cal., on three months' leave of absence.

Sanford, Joseph L., contract surgeon, arrived at San Francisco, Cal., on one month's leave of absence.

Cattermole, Charles A., contract surgeon, ordered to proceed from Manhattan, Nev., to San Francisco, Cal., and take transport to sail from the latter place on or about Sept. 5, 1906, for the Philippine Islands, and on arrival at Manila to report in person to the commanding general, Philippines Division, for assignment to duty.

Prentice, Arthur D., contract surgeon, relieved from duty in the Philippines Division, and ordered to proceed by first available transport to San Francisco, and on arrival report by telegraph to the Military Secretary of the Army for further orders.

Navy Changes.

Changes in the Medical Corps U S. Navy, for the week ending Aug. 25, 1906:

Elliot, M. S., surgeon, detached from the *Florida* and ordered to the *St. Louis*.

Iden, P. A. surgeon, to the *Florida*.

Pease, T. N., asst.-surgeon, resignation as an assistant surgeon in the Navy accepted to take effect August 21, 1906:

Jones, A. McK., acting asst.-surgeon, to the Naval Hospital, Norfolk, Va.

Baker, M. C., acting asst.-surgeon, to the Naval Hospital, Newport, R. I.

Longabaugh, R. I., acting asst.-surgeon, ordered to Naval Hospital, Mare Island, Cal.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Aug. 22, 1906:

Pettus, W. J., assistant surgeon-general, granted leave of absence for thirteen days, from August 20.

Rosenau, M. J., P. A. surgeon, granted leave of absence for fourteen days from August 20.

Nydegger, J. A., P. A. surgeon, leave of absence granted for three months from August 11, amended to read one month and fifteen days from September 3.

Cumming, H. S., P. A. surgeon, granted leave of absence for one month from September 15.

Anderson, J. F., P. A. surgeon, detailed as temporary chairman of board convened July 2, 1906, to investigate the origin and prevalence of typhoid fever in the District of Columbia, to serve during the absence of P. A. Surgeon M. J. Rosenau, on fourteen days' leave from August 20.

Hunt, Reid, chief Division of Pharmacology, and Roehrig, A. M., pharmacist, detailed to represent the service at the 54th Annual Meeting of the American Pharmaceutical Association at Indianapolis, September 3.

Porter, J. Y., sanitary inspector, granted leave of absence for seven days from August 6.

Dunn, James, acting asst.-surgeon, granted leave of absence for twenty-three days from August 13.

Townsend, F., acting asst.-surgeon, granted leave of absence for seven days.

Goodman, F. S., pharmacist, granted leave of absence for ten days, from September 10.

Ryder, L. W., pharmacist, granted leave of absence for twenty-five days from August 20.

Carlton, C. G., pharmacist, granted leave of absence for twenty-four days on account of sickness from July 9.

Hall, L. P., pharmacist, granted leave of absence for seven days from August 17, under Paragraph 210 of the Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended August 24, 1906:

SMALLPOX—UNITED STATES.

Illinois: Chicago, August 11-18, 2 cases.
Louisiana: New Orleans, August 4-18, 14 cases.
Oregon: General, July 1-31, 11 cases.
Tennessee: Knoxville, August 4-11, 1 case.
Utah: General, July 1-31, 32 cases.
Wisconsin: Appleton, August 11-18, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, July 7-14, 2 cases.
Brazil: Bahia, June 30-July 28, 15 cases; Rio de Janeiro, July 1-8, 1 case; July 22-29, 2 cases, 1 death.
Chile: Antofagasta, July 1-13, 23 cases, 4 deaths.
France: Paris, July 21-August 4, 7 cases.
India: Calcutta, June 30-July 7, 11 deaths; Madras, July 7-13, 3 deaths.
Russia: Odessa, July 21-28, 3 cases, 1 death; St. Petersburg, July 7-28, 8 cases, 3 deaths.
Siberia: Vladivostock, June 28-July 5, 3 cases.
Spain: Seville, July 1-31, 20 deaths.
Turkey: Constantinople, July 21-29, 1 death.
Uruguay: Montevideo, June 1-30, 1 death.

YELLOW FEVER—UNITED STATES.

Louisiana: New Iberia, August 19, 1 case.

YELLOW FEVER—FOREIGN.

Mexico: Merida, July 29-August 4, 6 cases, 2 deaths; Progreso August 7, 1 case, 1 death.

CHOLERA.

India: Calcutta, June 30-July 7, 18 deaths; Madras, July 7-13 12 deaths.

PLAGUE—INSULAR.

Hawaii: Honolulu, August 30, 1 death.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, July 1-8, 2 cases; July 22-29, 1 case.
Chile: Antofagasta, July 1-13, 4 cases, 2 deaths.
China: Hongkong, June 30-July 7, 12 cases, 7 deaths.
Egypt: Alexandria, July 13-27, 11 cases, 6 deaths; Port Said July 17, 1 case; Suez, July 14-27, 6 cases, 3 deaths.
Assioot Province: Assioot, July 19-28, 2 cases.
India: General, June 30-July 7, 630 cases, 536 deaths; Calcutta June 30-July 7, 9 deaths.
Japan: Formosa, General, July 10-30, 45 cases, 40 deaths.
Persia: Seistan, June 23-July 22, 90 cases, 85 deaths.
Peru: Lima, July 14-21, 1 case; Mollendo, July 4-18, 2 cases 2 deaths.

Society Proceedings

COMING MEETINGS.

Medical Soc. of the Missouri Valley, Council Bluffs, Iowa, Sept. 6-7
Med. Soc. of the State of Pennsylvania, Bedford Springs, Sept. 11-1
Washington State Medical Association, Spokane, Sept. 11-13.
Assn. of Military Surgeons of the U. S., Buffalo, N. Y., Sept. 11-1
Am. Assn. of Obstetricians and Gynecol., Cincinnati, O., Sept. 20-2
American Electro-Therapeutic Association, Philadelphia, Sept. 18-2

AMERICAN ORTHOPEDIC ASSOCIATION.

Twentieth Annual Meeting, held in Toronto, Canada, Aug 20-22, 1906.

The President, Dr. Bart E. MacKenzie, Toronto, in the Chai

Dr. MacKenzie delivered the president's annual addres He referred to the great problems that now confront the medical profession as a whole. These problems should be recognized to relate as closely to orthopedic surgeons as to an physicians; the specialist in any branch of medical work mus always remember that first of all he is a member of the grea profession of medicine, and that what affects the profession a a whole affects him. Subjects that especially unite orthopedi surgery to general medicine are tuberculosis and fresh fractures. Perhaps no group of men are so well qualified to car for fresh fractures as orthopedic surgeons. The orthopedist' experience in local treatment trains him especially well to trea also early paralyses, and neuroses that simulate organi lesions.

The president referred to the deaths of members durin the year and Dr. Roswell Park, Buffalo, spoke of the pathology in the case of Dr. Louis A. Weigel, one of the membe who had died. He said that the x-ray dermatitis on Dr. Weigel hands came on about two years before he died. The right han and part of the left had to be amputated on account of carc nomatous development, and in February, 1906, metastase were removed from the axillæ, and the breast was amputate Dr. Weigel's illness was exceedingly painful, but was mos bravely borne. He died a victim to his devotion to the Roentgen ray.

With reference in general to the effect of the Roentgen ra on the surface structures, Dr. Park said that apparently th blood vessels were primarily affected, producing blood stasi A toxic substance is evolved, and this produces the dermatiti The Roentgen ray can produce keratosis, but leads to cance only indirectly through chronic irritation in the same wa that a burn by ordinary heat may lead to malignant development.

Officers Elected.

The following officers were elected: President, Dr. Joel Goldthwait, Boston; vice-presidents, Dr. Henry Ling Taylo New York; and Dr. Ansel G. Cook, Hartford, Conn.; secretar Dr. Robert B. Osgood, Boston; treasurer, Dr. E. G. Bracket Boston; executive committee, Dr. John Ridlon, Chicago; D D. R. Townsend, New York; Dr. H. Augustus Wilson, Phi adelphia; Dr. Goldthwait and Dr. Osgood, ex-officio.

Sir Thomas Barlow, M.D., London; Sir James Barr, M.D., Liverpool; Sir William Broadbent, M.D., London; Dr. Henry William Langley Brown, West Bromwich, chairman of the council of the British Medical Association; Mr. George Cooper Franklin, F.R.C.S., Leicester, past-president of the British Medical Association; Dr. W. Dobinson, Halliburton, London; Sir Victor Horsley, F.R.C.S., London; Dr. Donald McAlister, Cambridge, president of the British Medical Council, and Sir William Julius Mickle, London.

THE GENERAL ADDRESSES.

Teaching of Obstetrics.

This subject was chosen by Dr. W. S. A. Griffith for the address on obstetrics. He says that some of the obvious imperfections in the teaching of obstetrics are for the most part due to the difficulty of providing practical clinical teaching. When attended by students who have had the necessary preliminary clinical teaching the out-patient maternities provide the most important and valuable training that any medical student can obtain, for as in private practice he is then placed almost entirely on his own resources. Another factor which has delayed the provision of adequate teaching in obstetrics, is the old ingrained idea that the process of labor is a single function of Nature, requiring for the most part a competent nurse only and that the practitioners of obstetrics, although recognized in theory as of equal standing, are to be looked down on in comparison with their colleagues in the other great branches of medicine and surgery. As the result of this, both in teaching and in examinations, the study of obstetrics has been relegated to a position totally unworthy of its immense importance to the practitioner and to the national welfare. Another defect in the teaching is due to the fact that the lecturers frequently have had little experience in the practice of obstetrics. The lecturer presides over no obstetric clinic, and has often had but little experience. He is an obstetrician in name, not in practice. In many of the provincial schools the lecturer is a successful general practitioner, to whom the fates have given a large obstetric experience, but whose experience as a teacher may have been quite inadequate. To place the teaching of obstetrics on the same basis as the teaching of medicine and surgery, it is essential that the clinical teaching be given in hospitals provided for the purpose, where a sufficient and continuous series of patients can be admitted, and having a large externe department where the advanced students can attend patients at their own homes. Lying-in wards in a general hospital would be equally valuable if there were a sufficiently large number of beds to ensure a regular series of patients in sufficient numbers. A large number of cases is less of a necessity than a continuous series. Every clinical teacher of obstetrics should be a practitioner of obstetrics having charge of the obstetric wards and externe maternity department, whose office as professor or lecturer would necessarily terminate with the cessation of his clinical duties. While it is perfectly clear that there are many general practitioners able to give excellent instruction in some of the details of practical midwifery, it is equally certain that there are many others whose methods of practice, especially in the disregard of aseptic precautions, would make them dangerous teachers, and would lead to the continuance of methods which tend to the perpetuation of the still high mortality from puerperal fever. The training of the student is also discussed.

Technic of Operations on Central Nervous System.

Sir Victor Horsley discussed this subject in his address in surgery. He said that the advance in technic of the surgical treatment of diseases of the brain and the spinal cord has been relatively less than the improvement in our knowledge of the seat and nature of the diseases for which surgical intervention is useful and necessary. Correct diagnosis of these affections is still far to seek, and yet operative treatment in such a difficult field is often expected to yield equally good results as the relatively easier and simpler work of curing hernias or of removing abdominal tumors. In this connection Horsley considers both the palliative and the curative surgical procedures to be adopted, the details of these procedures, such as previous preparation, anesthesia, maintenance of the bodily temperature, etc. Although he at one time favored a combined anesthesia of morphin with chloroform, he now uses pure chloroform. Ether he regards inadmissible as an anesthetic in operations on the central nervous system. To prevent shock and to maintain the physiologic energy during these operations on the brain, the wound should be irrigated constantly, usually with a solution of sublimate, 1 to 10,000, or with saline solution at a temperature of 115. This will also arrest capillary and arterial hemorrhage. Venous bleeding and capillary oozing can be controlled by the inhalation of oxygen. As to the method of opening the skull, the bone should be divided with as little vertically applied force as possible and removed with the least possible pressure on the brain and dura. This can best be done by first removing a trephine disc, then marking with a large saw the area to be removed, and finally cutting away the bone with a large bone forceps, all traction being directed outward. Horsley says that the less drainage is employed the better, and consequently every effort should be made to close the skin wound as early as possible. In all these cases operations should be resorted to as early as possible and the tumor should be freely exposed and examined and extirpated with the surrounding tissue. If it can not be removed without undue interference with important or essential structures, there remains some possibility of its undergoing retrogression in a certain number of cases.

The Circulation Viewed from the Periphery.

Sir James Barr took the above as the subject of the address in medicine. Diseases of the heart most frequently arise from causes acting on the periphery and the man who studies the circulation with the aid of the stethoscope only, is a positive danger to society. The capillaries varying from 0.5 to 1 mm. in length and from 7 to 13 microns in diameter, have a blood pressure of from 50 to 2,000 mm. of water and a velocity of from 0.5 to 25 mm. per second. Attempts to arrive at their capacity or sectional area have given unreliable results, because of the complicated factors influencing the pressure and rate of flow. Barr estimates the velocity of the capillary circulation by pressure on the skin driving out the blood, and noting the time occupied in its return. The velocity of the flow and the pressure stand in an inverse relation to each other; the greater the obstruction to the outflow the greater the capillary pressure and the less velocity of the blood in them. If an obstruction to venous outflow is imposed, the pressure in the veins tends to approach but does not equal that in the capillaries, and the pressure in the capillaries approaches but does not equal that in the arteries. Gravity increases the pressure in the capillaries in a varying degree in different persons, but seldom to more than half the difference in the hydrostatic pressure. The velocity in the capillaries varies as the general blood pressure, but is diminished by contraction of the arterioles which supply the part. The blood in the capillaries becomes surcharged with carbon dioxid when the velocity is reduced below 1 mm. per second, giving a dusky hue to the skin; this is often more apparent in the upper extremities because the circulation is more active in the capillaries of the feet on account of gravity. Viscosity of the blood, normally five times that of distilled water, varies greatly, is increased by CO_2, diminished by high temperature, and is increased in many diseases and forms the chief obstacle to the flow of blood through the capillaries. The arterioles interpose an obstruction which reduces the effect of arterial pressure on the capillaries; hence the more the arterioles are contracted the less the pressure in the capillaries and *vice versa.* The regulation of the circulation by the vasomotor nerves saves the nerve centers of the brain from being completely depleted as happens to a rabbit with paralyzed vasomotor nerves when he is hung up by the ears. The varying pressure to which the walls of the capillaries are subject and the permeability of the vessel walls account, in the author's opinion, for the phenomena of transudation and absorption, without assuming a secretory activity on the part of the endothelia. Liquid is forced out near the arterial end where the pressure is high

Miscellany

Advertisers and the Gullible.—The Dutch member of the newly founded International Antiquackery Association, van Elk, tells the true story that an advertisement appeared in the papers stating that for 75 cents a powder would be sent which, if scattered on the waters of a stream or pond, would stock it with edible fish. A man sent the 75 cents for the powder, but his money was returned to him with the statement that the advertisement was inserted on a wager that no paper would accept such a nonsensical advertisement and that no one would be found foolish enough to respond to it if published. The letter added that the applicant was not the only one; he had been preceded by 256 others.

Experimental Arteriosclerosis and Iodin.—According to an item in the *Med. Klinik* for April 29, Koranyi recently reported at a scientific meeting at Budapest that he had been able to control arteriosclerosis. He injected 17 rabbits at two-day intervals with 0.15 c.c. of a standard preparation of suprarenal extract. A small amount of a preparation of iodin was injected at the same time, also intravenously. After about 9 injections the animals were killed. In 8 of the 9 animals who had not been injected with iodin changes were found in the aorta characteristic of the "adrenalin arteriosclerosis" first described by Josué. Only one of the animals was sound in this respect, while of the animals treated with iodin, 6 were sound, and merely slight evidences of the arteriosclerosis were found in the 2 others. It seems evident from this research that iodin has a favorable influence on the arteries, modifying the great fluctuations of the blood pressure which are probably the principal factor in the experimental arteriosclerosis.

Auto-Narcosis for the Wounded and Others in Severe Pain.—We learn that Prof. C. L. Schleich of Berlin has recently published a pamphlet entitled "Auto-narcosis for the Wounded in War and Peace"—"Die Selbstnarkose der Verwundeten in Krieg und Frieden." It describes a little contrivance which he thinks may prove very useful. A small aluminum case holds three small bottles, each containing a long cotton wad fastened to the cork and impregnated with 50 gm. of his anesthetic mixture. This consists of 2 parts ethyl chlorid, 4 parts chloroform and 12 parts ether, the whole having a boiling point at 38 C., the fumes thus being of the same tension as the air in the lungs. The stopper is drawn from one of the bottles and the fumes inhaled. Analgesia is immediate and is followed by profound sleep. He believes that this harmless method of auto-anesthesia or its equivalent is destined to supplant morphin hypodermics. The appliances should be kept on hand in mines, factories and elsewhere, and the anesthetic be given before transporting the wounded persons.

Photographing the Dead for Identification.—The London *Lancet* for May 5 states that the coroner at two recent inquests commented on the unsatisfactory character of the photographs of the unidentified dead taken by the police authorities. It adds that Dr. Minovici has contributed a valuable communication to this subject from his experience as director of the Medicolegal Institute of Bucharest. He describes his methods in an article published in the *Archives d'Anthropologie Criminelle* for Nov. 15, 1904. He substitutes artificial eyes, and gives a natural appearance to the lids by means of lead foil or by pinning them with a fine pin to the eyeball. The jaws are drawn together with threads, and the face drawn to a natural expression by an arrangement of pins, evacuating accumulations of gases by incision in the scalp or mouth. He gives photographs of the various steps of this preparation of the corpse for photography, and states that by this means he was successful in one case in which the body had been immersed in water for six weeks, the identity being finally established by the photograph.

Injurious Influence of Night Work on the Composition of the Blood.—Gardenghi has been conducting research which apparently shows that light is as indispensable to human beings as to plants for normal growth and development. There seems to be a deficiency in the assimilation of iron under the influence of the lack of daylight, with consequent deficient formation of hemoglobin. Light seems to be required for normal production of hemoglobin the same as for the production of chlorophyll in plants. He presented the conclusions of his research at the recent International Congress for Professional Affections at Milan, dwelling especially on the harmfulness of night work. Long series of examinations of bakers at Parma, his home, showed that while the proportions of the blood corpuscles were about normal, the percentage of hemoglobin was very much below par in those who worked exclusively during the night. His article is reproduced in German in the *Wien. klin.-therap. Wochschr.*, xiii, 697.

Quackery.—In the address to the graduates at Edinburgh university, an abstract of which appears in the *Medical Press*, August 8, Thomas Annandale, professor of surgery, said that two theories have been suggested to explain why primitive man first had recourse to internal remedies for the cure of disease, the one being that it was accidental and the other that it was in imitation of the lower animals. He referred to Pliny's account of the origin of venesection that the hippopotamus, having become too fat and unwieldly through overeating, thrust his nose against a sharp-pointed reed, and when he had drawn sufficient blood closed the wound with clay. He said that probably the first special treatment of disease was due to the Egyptians or Chaldeans; from them the Greeks obtained their knowledge, and Cheiron was the first to instruct his countrymen, among them Esculapius, who is credited with being the originator of medicine as a distinct profession. Between the days Esculapius, who flourished in 1200 B.C., and those of Hippocrates, 400 years later, medicine and myth are inextricably intermingled; the practice of the art seems to have been in the hands of a priesthood, who worshiped in temples devoted to Esculapius as the god of physic. With the writings of Hippocrates a new era dawned, for they show a marvelous knowledge of injuries and disease and contain methods of treatment founded on sound principles. As knowledge and civilization advanced, although improvements in the art of medicine took place, quackery continued rampant. The credulity which the study of quackery discovers almost approaches monomania or insanity. This credulity is explained by the fact that in all times there have been men and women of strong personalities and unlimited self-assertion who dominate their fellow creatures and exercise a power for evil as well as good, and it is also explained by the natural tendency of a patient with a chronic illness to seek help from any source. He mentioned the exponents of quackery in the past. There was Buley, for instance, in the days of Edward VI, who gave roasted rats as remedies to sick children; touching for the king's evil, which attained its height in the reign of Charles II; the quack oculists of Queen Anne, who suffered from weak eyes and was treated by William Reade, a tailor, and Roger Grant, a cobbler and Anabaptist preacher. Mesmer flourished in 1776, and a commission of the French Academy of Science was deputed by the king to investigate his claims. Among noted quacks of the past, Annandale said, were Katterfelto, who wandered through the country with a caravan full of black cats and was finally condemned as a vagabond by the mayor of Shrewsbury; a Dr. Graham, who sold an elixir of life to any one who would pay him $5,000 for it, and conducted a Temple of Health, in which Lady Hamilton, Lord Nelson's goddess, took part in musical performances. Again, there was the fat, ugly, tippling Mrs. Mapp, with her carriage and four, who was esteemed as a bone-setter and known popularly as "Crazy Sally of Epsom." A very notorious quack was St. John Long, son of an Irish basketmaker, who acquired fame as a healer. His house in Harley Street was flocked to by the rank and fashion of the day, who were treated by inhaling some mixture through a tube. The street was often blocked by his patients' carriages; he was received into the best society; it is said that he made $67,000 in one year. He ended by being tried for manslaughter at the Old Bailey, but escaped with a fine of $1,250. Faith cures and cures acting on the imagination have thus flourished from very early times, Annandale said, and more recently a faith cure under the name of Christian Science has sprung up. In this history is repeating itself. In ancient and more modern days so-called faith cures have been carried out by the aid of ceremonies and incantations and the erection of temples to aid the imagination.

mainland and what the sea furnishes. Several negro women, the most ugly and vicious-looking that we have seen so far, who were selling palm wine, did the best business. The wine in large earthen jars was still fermenting and bubbling. Two cents bought a gourdbowlful, holding about a quart. Two such doses make the black happy for the balance of the day. The behavior of the Amazons who dispensed this stuff was enough to show that they had done their share in emptying their vessels. We tasted this palm toddy. It was cool and pleasant to the taste, slightly sour and had some of the pungency of dry champagne. There were fish, fresh and fried, bananas, thin, narrow strips of bread fresh from the stove, served hot on banana leaves, cocoanuts, papaya, manihot roots, raw and boiled, several kinds of capsicum, small bundles of split firewood, etc., all articles for which only the natives have use. What little is left of the island outside of the city is a sandy desert.

The sight that I presume every visitor who lands here goes to see is the old fort of St. Sebastian. It is this ancient fort, with its grim, high walls blackened with age, which is seen first when the city comes in view. The building of this fort dates to the time of Da Gama, when he sailed along the east coast of Africa in search of a new waterway to East India. The fort is built on a narrow spit of the island, covering its entire width, and the thick, solid walls rise from the sea on three sides. It is kept in good repair and now serves as a barrack for the soldiers. The walls rise high above the inner even court, where the black soldiers are drilled in the art of war. On the top of the rampart facing the sea the portholes are occupied by ancient cannons of prodigious size, mounted on carriages with rickety wooden wheels. These fearful engines of war probably have never spoken, but were ready centuries ago to spit fire and destruction had any foreign power made an attempt to gain possession of the little island. This ancient citadel, with its historic guns, would be helpless against a single modern battleship, but it has been respected in the past, and may well be proud to have outlived other more formidable strongholds over which the flag of many a conqueror has floated since their foundations were laid. The veteran fortress shows only one scar, and that was made by an accidental explosion of dynamite and is now being repaired with the utmost care.

The Roman Catholic church rules here supreme. The cathedral is a very modest church and the other two churches show no greater pretensions. The church has been prudent in the expenditure of money. Schools had to be erected and maintained. In the yard of one of these schools we saw the black children at play after the morning lessons were over, and they were indeed a cheerful, happy lot.

Portuguese and natives live on the best of terms throughout this possession. There is no conflict nor even manifest dissatisfaction here. The government treats its black subjects leniently and with much consideration. Experience has shown that the negro can be led, but not forced, to do a thing which comes in conflict with his own ideas of right and justice; he is a lamb when led, a mule when forced. Only two Germans and nine Englishmen live in the city and only a very few East Indians and Arabs. Mozambique has its own postage stamps, and the money in circulation is coined for Portuguese East Africa.

MOZAMBIQUE MILITARY AND CIVIL HOSPITAL.

I have never been in a colony or protectorate where the native sick are treated with so much consideration and are taken care of so well as in Portuguese East Africa. The colony has no separate hospitals for Europeans, as in British and in German East Africa, but white and black live under the same roof and receive the same care. We miss here the superb, costly buildings set aside exclusively for the care of Europeans, such as I have described in speaking of British East Africa and German East Africa. Of all nations owning or protecting foreign lands, Portugal has had the longest experience and has learned how to treat alien subjects without causing friction. The sentiments of the people are considered in formulating rules for their government. Perhaps the most important secret of Portuguese peaceful colonial rule is found in the fact that the line of division between the officers and the people of the home government and the blacks is not as sharply drawn as in the colonies of other nations. It is the conspicuous preference given to the whites that stings the blacks, the rightful owners of the soil. The Portuguese have learned this by a long experience and shape their rules accordingly.

I can give no more striking example of Portugal's lenient foreign policy than by a brief description of the Mozambique Military and Civil Hospital, which answers to the construction and administration of every other government hospital in Portuguese East Africa, of which there are several. In the first place, these hospitals are built and, at least in part, maintained by the government, and are in charge of Portuguese military surgeons, especially trained for their manifold functions. In the second place, the sick in the colony, white and black, officers, government officials, soldiers, policemen, rich and poor, educated and ignorant, old and young, men, women and children, are under the same administration. While the whites are given preferences, these do not stand out in the eyes of the natives in such sharp lines as in the hospitals of most of the other colonies. The same doctor who treats the whites attends to the blacks; the same sisters who nurse the Europeans take care of the natives. The difference, if any, is in degree, not in kind, and it is considerations like these that the negro knows how to appreciate.

The hospital was built twenty-five years ago, and at that time it would have compared well with most of the hospitals of Europe and America in construction and equipment. Its architecture is decidedly Spanish in style. Like all other substantial houses on the coast of Africa, it is built of rough stones of coral rock, with a heavy inside and outside coating of cement. The two main buildings are two stories high and serve for private rooms of patients of the first class, small wards for the second class, directors' apartments, pharmacy, storerooms, chapel and dormitory for the sisters. The large wards for patients of the third class and all charity cases are in one-story pavilions, the blacks in separate wards. The first-class patients pay $2 per day, the second-class 75 cents and the third-class 25 cents. Light and air flood every room of the handsome, well-arranged complex of buildings, which on one side face the principal street of the city and park and on the other the harbor. As the city of Mozambique must rely on rain for its water supply, each house has its own cistern. The hospital has two immense underground cisterns, with a total capacity of 600,000 tons, which furnish an abundance of pure, cool drinking water. These cisterns are located between the pavilions. The spaces between the main buildings and the wings are paved with flat stones and are kept as clean as the mosaic tile floors in the interior of the buildings. The hospital has 200 beds, and during the rainy season, when malaria is most prevalent, its full capacity is heavily taxed, but at the present time the number of patients is only eighty. The pharmacy is in charge of a competent druggist and is well stocked, and the two large storerooms are well supplied with medicines, dressing materials, bedding, etc. The operating room is small but well constructed and equipped for modern surgical work. Very little surgery is done here, as in all other East African hospitals, on an average not more than two operations a day, and most of these are minor operations. A Roentgen apparatus has recently arrived and will be put in operation as soon as electric power can be secured, and then it will be the first one to be employed on the East Coast of Africa. Dr. Francisco Maria do Amaral is the director of the hospital and is assisted by three other military surgeons. He speaks English fluently and has kept pace with the modern progress in medicine and surgery. He took great pains in explaining the details of the hospital work and in showing the interesting cases then under treatment.

Eight Catholic sisters have charge of the nursing and they are assisted by orderlies and native helpers. The average number of patients during the year is about 2,000. The patients come from all parts of the province of Mozambique. Dr. Amaral has been stationed here for a long time and has never seen a case either of carcinoma or appendicitis in the black. The same holds true of the Eskimos of the far north, as I

BERIBERI.

This disease was observed 18 times during the year. Lorenzo Marques furnished 15 cases, Mozambique 1 and Chile 2. Of this number, 5 died.

RHEUMATISM.

Of this disease there are recorded 370 cases, 230 acute and 120 chronic, with a mortality of 4, 2 from the acute and 2 from the chronic form of the disease.

We miss in this enumeration of diseases carcinoma, with the exception, perhaps, of a doubtful case, also appendicitis and typhoid fever. Strangely enough, typhoid fever has not as yet gained a foothold on the soil of the east coast of Africa, although the sanitary conditions in many places are such as would seem favorable to the growth and spread of the bacillus of the disease. Neither is there mention made of the most common diseases of childhood: measles, diphtheria, scarlatina and whooping-cough. Twelve cases of cerebrospinal meningitis were observed, with a mortality of 5. Considering the severity of the climate, the prevalence of malaria and its many complications and the doubtful water supply of the people living in the interior, the general mortality could not be called excessive. The national vice of laziness and the absence of manufacturing establishments of any importance account for the small number of injuries, only 449 cases.

BEIRA.

Beira, at the mouth of the Pungwe River and a short distance south from the delta of the great Zambesi River, is the most important port of Portuguese East Africa. The little city is located on a narrow, sandy strip of land between the mouth of the Pungwe River, which serves as an excellent harbor, and Mazangzani Bay. The terminus of the Rhodesia Railroad here adds much to the commercial and shipping importance of the city. Most of the houses are solid two-story brick and cement buildings, with tile or corrugated iron roofs. There are only two or three horse vehicles here. The principal street bisects the city and has in the middle a narrow-gauge track of the man trolley cars, a great convenience for getting about the far-spun-out city and for the transfer of freight. Most of the professional and business men have their own private car and their own man to push it. Two persons can sit comfortably side by side, and in case of need a third can be sandwiched in between. There are only a few short sidewalks in the city, so that most of the walking must be done by wading ankle-deep in the loose, hot sand. At the time of our visit the heat was very oppressive. There are a few large stores, in which almost everything is kept which is most needed, but at prices which stun the visitor. Among the several hotels the Savoy and Queen's Hotel are the best. The table of the former, for such a place as this, is excellent, and the rooms are large and airy. A bank, several steamship offices and the railway office handle the bulk of the money. The prison, in the heart of the business part of the city, is a most unique building. It is small and has all the appearances of a neat chapel if it were not for the strong iron bars of the high, narrow and numerous windows. The city is only ten years old. The next city on the coast south from here, Sofula, was for several hundred years the port. The good harbor here made it necessary to transfer business and shipping to this place. A few kinds of hardy trees, cocoa palms, eucalyptus, acacia, wild almond, etc., have been planted and seem to thrive in this dry, hot, sandy soil. Most of the natives are kaffirs, black as coal and fine specimens of physical development and muscular strength. Most of the laborers wore nothing but a loin cloth, and this in most instances was none too wide.

Beira has an unenviable reputation as a fever nest. Mr. Bryce, who visited this place before the railroad was completed, made the statement that no white man could remain three consecutive days anywhere between Beira and the inland mountain plateau and escape an attack of fever. All the white people who have lived here for several years have had their good share of malaria. I examined a number of negro children and they all had the prominent abdomen seen in children living in malarial districts, and in all of them the enlarged spleen could be felt several inches below the costal arch. All the white women I saw were pale, emaciated and evidently much enfeebled, as was shown by their drawn faces and languid walk. Their little children were in the same condition. Several of the sisters in the hospital were very anemic, poor in flesh and none too strong for the arduous duties in care of the sick in their charge.

Beira is one of the hottest places on the coast. The hottest months are December and January. At this time the thermometer not infrequently registers 120 F. in the shade, and I was told that eggs placed on the hot sand and exposed to the burning rays of the sun were cooked hard in a short time. Throughout the year it is disagreeably warm from 10 o'clock in the morning until 4 in the afternoon, and during this time the people remain in their houses and very little work, if any, is done. Even the postoffice officials have their midday siesta. The mealtimes are so arranged that they do not interfere with the working hours. The first plain breakfast early in the morning is followed by a second one at 11:30 a.m., which is a substantial meal. Dinner is served late in the evening.

BEIRA GOVERNMENT HOSPITAL.

Beira has only one hospital, which was built and is maintained at government expense. It is beautifully located in park-like grounds and faces the principal street on one side and on the other side the bay. The hospital was built ten years ago at a cost of $25,000 and has room for sixty patients. At present, the coolest and healthiest season of the year, the number of patients does not exceed thirty, and most of these are suffering from malaria. The government physician, Dr. José Aranjo de Lacerda, is in charge of the hospital and the nursing is under the care of five Sisters of St. Francis. The hospital consists of two one-story brick and cement barracks, one for the whites and the other for the blacks. The cots in the latter building are the narrowest I have ever seen, hardly eighteen inches in width. The framework is made of iron bars, on which a piece of canvas is stretched. Each cot is supplied with two white sheets and a pillow, and the patients on these, the narrowest of all beds, appeared to be comfortable. Simple and plain as these beds are, they must seem a luxury to the blacks, who know no softer bed than a mat on the bare ground. In the cottage for the whites are a number of plainly furnished but very comfortable private rooms, for which a charge of $5 a day is made. In the little wards the second-class patients pay $1 a day. Few of the negroes are able to pay anything, and as this class of patients during the year is large they become a heavy tax on the financial resources of the hospital.

I saw and examined here patients suffering from malaria in all its multitudinous forms. In the acute form the temperature curves were nearly the same in all cases. A chill, followed by a temperature of 40.8 C., then under quinin treatment a speedy fall to normal. Dr. Lacerda, like Dr. Amaral, relies largely on the subcutaneous use of quinin in doses of seven and one-half to fifteen grains, administered once or twice during twenty-four hours. In some cases quinin is given at the same time by the mouth, and to prevent its being ejected by vomiting it is mixed with pulverized gentian. If, as is often the case, a light icterus makes its appearance, three grains of calomel are given, followed by a saline cathartic. In the beginning of the attack evaporating camphorated lotions are employed to reduce the high temperature, and phenacetin is given to relieve the intense headache. In chronic cases arsenic is frequently used in combination with quinin. In the pernicious form of malaria the system is saturated as quickly as possible with quinin, given subcutaneously and by the stomach, so that the patient receives at least forty-five grains during the first twenty-four hours. One case of blackwater fever was under treatment and well on the way to recovery. Beside malaria, I found in the ward for the natives a case of advanced pulmonary tuberculosis, parenchymatous mammitis in a syphilitic woman, tropical abscess in a boy about 12 years old and a case of chronic dysentery. In front of this ward we saw squatting on the sand an old negro, a mere skeleton, evidently the subject of some mental derangement. He refused to eat rice, meat and other nutritious articles of the hospital diet, but made his evening meal of black coffee and a piece of bread, which he tore in pieces and

total number of candidates examined was 16, of whom 11 passed and 5 failed, including *one undergraduate* and one osteopath. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
University of Colorado	(1906)	72.3, 79.3, 81
College of P. & S., Los Angeles	(1905)	74.1
Denver Homeo. Med. Coll.	(1906)	72.4, 73, 76.1
Northwestern Univ. Med. School	(1901)	78.7
Eclectic Med. Inst., Cincinnati	(1906)	72.5
Jefferson Med. Coll.	(1905)	70
Royal University of Padua	(1884)	71.2

FAILED.

College.	Year. Grad.	Per Cent.
Kentucky University	(1903)	66
Barnes Med. Coll.	(1905)	65.9
Missouri Med. Coll.	(1888)	48.7

Besides the following who were registered on presentation of acceptable credentials, there were also registered two old practitioners, one of whom was an army surgeon during the Civil War:

Cooper Medical College	(1894)
University of Colorado	(10, 1906)
Denver and Gross College of Medicine	(1, 1905), (18, 1906)
College of P. and S. Chicago	(1, 1904), (2, 1905)
Northwestern University Medical School	(1906)
Rush Medical College	(1888), (1892)
Bennett College of Eclectic Med. and Surg.	(1882)
College of P. and S., Keokuk	(1887), (1904)
Tulane University	(1901)
Maryland Medical College	(1905)
College of P. and S., Boston	(1894)
Harvard University Medical School	(1899)
University of Michigan	(1904)
University of Minnesota	(1904)
University Med. Coll., Kansas City	(1891), (1906)
Ensworth Medical College	(1897)
Northwestern Medical College, St. Joseph	(1892)
Barnes Medical College	(1893)
Niagara University	(1890)
New York Med. Coll. and Hospital for Women	(1894)
Albany Medical College	(1881)
Western Reserve University	(1883), (1904)
Eclectic Medical Institute	(1886), (1893)
University of the South	(1900)
University of Vermont	(1889)
Ecolé de Med. de Paris	(1904)

The following were rejected on account of not having acceptable credentials:

Northwestern University Medical School	(1897)
Chattanooga Medical College	(1903)
Fifth Medical College, Nagasaki, Japan	(1897)

Indian Territory July Report.—Dr. M. F. Williams, secretary of the Board of Medical Examiners of the Western District, sends us a list of individuals registered on their credentials without examination, at the meeting held at Muskogee, July 2, 1906. The following colleges were represented:

REGISTERED.

Howard University	(1904)
Georgia College of Eclectic Medicine and Surgery	(1898)
Northwestern University Medical School	(1905)
National Medical University	(1903)
Indiana Medical College (Purdue University)	(1906)
Keokuk Medical College	(1900)
University of Louisville	(1894), (2, 1906)
Maryland Medical College	(1905)
Washington University, St. Louis	(1906)
College of P. and S., St. Louis	(3, 1906)
Barnes Medical College	(3, 1906)
Kansas City Medical College	(1901)
Missouri Medical College	(1884), (1906)
University Medical College, Kansas City	(1905)
Memphis Hosp. Med. Coll.	(1901), (1906)
Meharry Medical College	(1898), (1905), (5, 1906)

REJECTED.

Gate City Medical College*	(1905)

* School not recognized.

Iowa May and June Reports.—Dr. J. F. Kennedy, secretary of the Iowa State Board of Medical Examiners, reports the written examinations held at Keokuk, Sioux City, Iowa City and Des Moines, May 23-24, May 31-June 2, June 6-8 and June 11-13, 1906, respectively. The number of subjects examined *in* was 8; total number of questions asked, 100; percentage required to pass, 75.

At the examination held at Keokuk the total number of candidates examined was 52, of whom 43 passed and 9 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Keokuk Med. Coll. of P. & S. (1905) 75; (1906) the grade of 77 was reached by *two*, 78 by six, 79 by three, 80 by two, 81 by one, 82 by six, 83 and 84 by five each, 85 by three, 86 by four, 87 by one and 88 by four.		

FAILED.

College.	Year. Grad.	Per Cent.
Keokuk Med. Coll. of P. & S.	(1906)	60, 65, 67, 72, 73, 73, 74, 74
College of P. & S., St. Louis	(1906)	60

At the examination held at Sioux City the total number of candidates examined was 17, of whom 14 passed and 3 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Sioux City Coll. of Med. (1906) the grades of 75 and 79 were reached by *one* each, 80 by five and 82, 83, 85 and 86 each by one each.		
Illinois Med. Coll.	(1904)	75
Creighton Med. Coll.	(1906)	86
New York *University*	(1893)	91

FAILED.

College.	Year. Grad.	Per Cent.
Sioux City Coll. of Med.	(1906)	70, 73, 73

At the examination held at Iowa City the total number of candidates examined was 59, all of whom passed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
University of Iowa (1906) the grade of 77 was reached by three, 78 by one, 79 by three, 80 and 81 by four each, 82 and 83 by seven each, 84 by five, 85 by four, 86 by six, 87 by eight, 88 by one, 89 by two and 90, 92 and 93 by one each.		
University of Louisville	(1906)	86

At the examination held at Des Moines the total number of candidates examined was 30, of whom 27 passed and 3 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Yale University	(1903)	86
Drake University	(1906)	79, 82, 83, 85, 86, 87, 88, 89, 91
Bennett Med. Coll. Eclec., Chicago	(1906)	85
College of P. & S., Chicago	(1906)	81, 82, 83, 88
Northwestern Univ. *Med. School*	*(1904)*	90
Rush Med. Coll.	(1902)	81
University of Michigan	(1904)	90
Creighton Med. Coll.	(1906)	76, 78, 79, 81, 81, 85
Jefferson Med. Coll.	(1906)	84
Meharry Med. Coll.	(1902)	75
Royal University, Christiania, Norway	(1903)	80

FAILED.

College.	Year. Grad.	Per Cent.
Hahnemann Med. Coll., Chicago	(1906)	60
Ensworth Med. Coll.	(1905)	72
Queen's University, Kingston	(1906)	68

New Mexico May Report.—Dr. B. D. Black, secretary of the New Mexico Board of Health, sends us a report of those registered on their credentials without examination, at the meeting held May, 1906. The following colleges were represented:

Arkansas University	(1884)
Denver and Gross College of Medicine	(1905)
Gross Medical College	(1888)
Atlanta Medical College	(1898)
Bennett College of Eclectic Medicine and Surgery, Chicago	(1884)
Northwestern University Medical School	(1896)
Rush Medical College	(1903)
Indiana Medical College*	(1873)
Hahnemann Medical College, Chicago,	(1890), (1903)
Hospital Coll. of Med. Louisville	(1894), (1900), (2, 1904), (1905)
University of Louisville	(1903)
Kentucky School of Medicine	(1898)
Tulane University	(1898), (1902)
Baltimore Med College	(1892)
University of Michigan	(1883)
College of P. & S., St. Joseph	(1882)
University Med. Coll., Kansas City	(1900), (2, 1904)
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(2, 1897) (1899), 1904), (1905).
University of Missouri	(1905)
St. Louis Medical College†	(1890)
University of Minnesota	(1898)
Cornell University	(1899), (1902)
Long Island College Hospital	(1884)
New York Homeopathic Medical College and Hospital	(1904)
Medical College of Ohio	(1887)
Miami Medical College	(1878), (1881)
Pulte Medical College	(1887)
Western Reserve University	(1890)
Starling Medical College	(1897), (1898)
Jefferson Medical College	(1898), (1903)
Vanderbilt University	(1887)

* In 1878 became Medical College of Indiana.
† Became Med. Dept. Washington University in 1891

Medical Organization

Georgia.

WASHINGTON COUNTY MEDICAL SOCIETY.—With the aid of Dr. W. W. Pilcher, Warrenton, councilor for the Tenth district, the physicians of Washington County met at Sandersville, organized a county medical society *on the standard plan* and elected the following officers: Dr. David E. McMaster, Tennille, president; Dr. Oscar L. Rodgers, Sandersville, vice-president; Dr. Henry A. Hermann, Sandersville, secretary and treasurer, and Drs. Eugene A. Harris, Sandersville; Julian H. Evans, Davisborough, and *D. L. Cheatham*, Sandersville, censors.

To control the choreiform movements in some of these cases Shoemaker recommends the administration of cimicifuga racemosa, giving the fluidextract in 5 minim doses (.20), three times a day after food. The dose should be increased daily until full physiologic effects are produced. The symptoms thus produced are vertigo, intense headache and nausea. This preparation, according to Shoemaker, not only ameliorates the symptoms by lessening the reflex activity in the spinal cord, but when prescribed in small doses it aids and stimulates digestion by awakening the action of the glands along the alimentary tract.

In cases in which the menstrual flow has been checked this preparation is also of value. It serves as a stimulant to the heart and general circulation similarly to digitalis. As an efficient form of medication to be used along with cimicifuga as a synerguist, the following combination is recommended:

R.	Ext. hyoscyami			
	Ext. cannabis indicæ, āā	gr. ¼		015
	Camphoræ monobromatis	gr. v		30
	Olei theobromatis, q. s.			

M. Ft. suppository No. i. Sig.: One suppository inserted into the rectum three times daily.

Salicylic Acid.

IN PRURITUS.

The following combination containing salicylic acid is recommended by Ringer in the treatment of pruritus of the vulva and anus:

℞.	Acidi salicylici	ʒii	8	
	Olei theobromæ	ʒvi	24	
	Olei myristicæ	f. ʒii	8	

M. Ft. unguentum. Sig.: Apply locally to the affected parts.

FOR CORNS.

In the treatment of corns Hare recommends the following combination:

℞.	Acidi salicylici	gr. xxx	2	
	Ext. cannabis ind.	gr. v		30
	Collodii	f. ℥ss	15	

M. Sig.: Apply with a brush until a good coat is formed.

FOR WORMS.

To get rid of thread worms or seat worms the following injection by the bowel is recommended:

℞.	Acidi salicylici			
	Sodii boratis, āā	ʒss	2	
	Aquæ	Oi	500	

M. Sig.: Warm gently and inject into the bowels.

For a child the amount should be reduced one-half in strength.

FOR BROMIDROSIS.

In the treatment of bromidrosis of the feet associated with fetor, salicylic acid is of service, dusted over the parts, or the following powder may be used:

R.	Acidi salicylici			
	Pulv. amyli, āā	℥ss	15	

M. Sig.: Apply locally to the feet.

FOR ECZEMA.

In eczema of the face and hands, when the eczema is moist, the following combination is advised, applied locally:

R.	Acidi salicylici	gr. v-x		30-.65
	Pulv. amyli			
	Pulv. zinci oxidi, āā	ʒii	8	
	Petrolati, liq.	f. ℥ss	15	

M. Ft. unguentum. Sig.: Apply locally.

FOR CHANCRES.

In the treatment of soft chancres and venereal sores salicylic acid is sometimes of value:

R.	Acidi salicylici	gr. xx	1	20
	Alcoholis	gtt. xlv	3	
	Adipis benzoinati	℥ii	60	

M. Sig.: Apply locally.

Or,

℞.	Acidi salicylici	gr. xv	1	
	Pulv. amyli vel cretæ	ʒii	8	

M. Sig: Apply locally.

Incompatibility of Potassium Iodid.

In speaking of the frequency of prescribing preparations which are incompatible, our attention is called to an article by Jennings in *London Hosp. Gazette*, who states that potassium iodid, when prescribed with other preparations, frequently causes trouble. This preparation, in a simple solution, when exposed to the light, often liberates iodin.

Potassium iodid should never be prescribed with ferric chlorid as the latter preparation is rapidly decomposed, forming ferrous iodid and free iodin. According to Jennings, however, the two scale preparations, iron and ammonium citrate, and tartarized iron are compatible with potassium iodid.

A crystalline precipitate of strychnia iodid is formed when strychnin hydrochlorid is mixed with a solution of potassium iodid, and in concentrated solutions a precipitate may be formed immediately.

Spirits of nitrous ether contains a small amount of free nitrous acid and a free acid where combined with potassium iodid may liberate iodin. In the same way sodium nitrite may produce like results.

The following combination serves as an example of this incompatibility:

℞.	Sodii nitritis	gr. ii		12
	Potassii iodidi	gr. v		30
	Caffeinæ citratis	gr. x		65
	Aquæ	f. ℥i	30	

M. Sig.: As directed.

In the foregoing free iodin will be liberated.

Caffein citrate in the above, being a very weak base, is separated into the alkaloid caffein and citric acid when mixed with water, and the latter decomposes the sodium nitrite, forming the nitrous acid.

Bismuth oxynitrate is *incompatible with potassium iodid*, when the two are mixed with water, producing a yellowish color, changing to a brick color later. This is a case of double decomposition, no free iodin being produced.

Ocular Eczema.

In the treatment of ocular eczema, which is most commonly a disease of childhood, and which forms 21 per cent. of all the diseases of childhood, Frederick Krauss in *Med. Record* states that three phases of treatment should be considered: 1. Hygienic and dietetic; 2, medicinal; 3, local. The hygienic treatment, according to Krauss, should consist in fresh air, wholesome, nourishing food, the abstinence from sweets, pastry of all sorts, and in severe cases absolute rest in bed. The room should be so situated as to exclude the direct sun's rays, but should admit plenty of light. A dark room should never be permitted, but the eyes should be protected from strong light by tinted lenses, a shade or a bandage over the eyes if the discharge is not too great.

The diet should consist of milk properly modified, eggs, fresh cooked meat or raw meat juice, orange juice, stewed fruits, etc., omitting puddings and pies and all pastries. Sugar corn, bananas, peanuts and pretzels should be especially excluded from the diet.

Salt water baths daily are recommended, given warm at bedtime. The medical treatment consists of tonics and alteratives with the relief of constipation.

Krauss recommends the following combination as a tonic and alterative:

℞.	Syr. ferri iodidi	ʒiv	15	
	Syr. acidi hydriodici	℥i	30	
	Syr. hypophos. co. (N. F.)	℥iss	45	

M. Sig.: One teaspoonful in water before each meal. In children from twelve to fifteen years of age two teaspoonfuls may be given.

Attention must also be directed to eczema of other parts of the body, especially to the nares, for which an alkaline cleansing wash, followed by a bland ointment, such as the unguentum acidi borici is advised.

The local treatment to be carried out in the milder cases of eczema of the conjunctiva is a simple boric acid wash, with the

wilfully neglecting to furnish his wife, then pregnant and about to be delivered of a child, with such care and attention as were necessary during her confinement in childbirth, thereby causing her death. But it was manifest from the evidence that the confinement came five days sooner than they expected it; that the wife, having read, besides other books, "Tokology," and corresponded with its author, had resolved to do without the services of a physician in her confinement, and had influenced her husband to adopt her opinion that the services of a physician would be unnecessary at such a time; that during her labor he dutifully remained with her, and assisted her to the best of his ability, and as she directed him; that when he discovered her peril he called in two women living in the same house to assist him in caring for both mother and babe; and that on the suggestion of one of them he immediately, and over his wife's objection, sent for a competent physician to minister to her, and that the latter, in spite of her protestations, apparently did what he could, and all she would allow him to do, to relieve her, but failed to preserve her life. In view of these facts, and the further facts that the husband was an affectionate one, and had never appeared indifferent to his wife or neglectful of any conjugal duty, and that in failing to earlier call in a physician he acted in good faith and at her request, though he doubtless erred in so doing, this court fails to find any just or reasonable ground for the verdict of the jury; indeed, it thinks it wholly without support from the evidence.

Those of us who reverence the medical profession and implicitly trust the learning and skill of the family physician, the court goes on to say, may be disposed to attribute to ignorance or prejudice such a lack of confidence in that profession as was manifested by this wife, and wonder that the husband, in the face of such a crisis as confronted them, should have allowed himself to be influenced to trust to Nature's laws, or supernatural aid, rather than medical skill; but the fact remains that there are many who reject, as they did, both medicine and surgery for other means, or supposed means, of healing, and are perfectly sincere in doing so. We may concede that the wife made a grievous mistake in adhering to her purpose of rejecting medical aid, yet in view of the suffering, and, in the end, death, to which she subjected herself, her sincerity can not be doubted. And certainly there was nothing in the evidence which tended to prove that the husband, though making the same mistake, was any less sincere than she, unless it was the fact of his sending for a physician after the birth of the child. This act, however, appeared from the evidence to have resulted more from his desire to leave nothing undone for her relief than from a belief that benefit would result to the wife from the physician's presence or treatment. In any event, it was the very opposite of neglect, and should go to the credit, instead of the debit, side in the husband's accounting for the offense charged in the indictment. One cannot be said in any manner to neglect or refuse to perform a duty unless he has knowledge of the condition of things which require performance at his hands.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

1 Medical Education and Medical Progress. G. H. Grant, Richmond, Ind.
2 *Insane Lovers. J. W. Stevens, Amityville, L. I.
3 Medical Inspection in Public Schools. I. C. Philbrick, Lincoln, Neb.
4 *Removal of an Intraligamentary Cyst and Bilateral Oöphorectomy During Early Pregnancy Without Interrupting Gestation. A. Brothers, New York.
5 *Contribution to the Etiology of Otitis Media Acuta Suppurativa Post Morbillos. G. Baar, Portland, Ore.

2. Insane Lovers.—Stevens calls attention to this subject as one of much importance to the general practitioner who first sees these cases. They are not uncommon in asylums and in neurologic practice. The patient may seem clear and rational on all other subjects, so that for some time he or she is considered entirely sane. The maniacal, insane lovers differ in certain prominent features from those of the paranoid class. In the *former group* the origin of this love is always to be traced to the abnormal sexual excitement, increased susceptibility to stimuli, facilitated release of impulses, and the lack of the restraining influence of the ethical sensibilities in the presence of elation and sense of well-being. At the beginning of this condition delusions and hallucinations are nearly always absent. In the paranoid case this love is only a part of a progressive and systematized delusional state. A strangely erotic element is not necessarily present. The maniacal patient often recognizes the abnormal nature of her impulses, while the paranoiac never does. The paranoiac is practically always monogamous, the maniacal often polygamous. In the latter the love disappears with the subsidence of the active symptoms of the individual attack, while in the former it remains throughout life. These patients should be carefully looked out for, not only for their own sake, but for the sake of their victims.

4. Bilateral Oöphorectomy and Removal of Intraligamentary Cyst.—Brothers operated in a case of this kind. The patient was seven weeks pregnant. The tumor lay quite low in the cul-de-sac of Douglas. Laparatomy was performed through a suprapubic transverse incision. The intraligamentary cyst was found on the right side, behind the uterus, and was removed in one mass with the closely connected Fallopian tube and cystic ovary. The ovary of the left side was found enlarged and microcystic. This ovary was exsected. Convalescence was uninterrupted, and the patient was delivered at term of a healthy child.

5. Etiology of Otitis Media Suppurativa Post Morbillos.—Baar reports the history of five children in the same family who were attacked with measles. In all of them there appeared an acute suppurative otitis media. In three of these children the mastoid process, the antrum and the cranial cavity had to be opened on account of alarming cerebral symptoms which appeared in spite of previous painstaking antiphlogistic and antiseptic treatment, poultices and drainage after careful irrigation of the exterior auditory meatus with warm solutions of borax or instillation with peroxid of hydrogen and drying. Baar declares that the appearance of purulent inflammation of the middle ear at the end of the second week of illness seems to speak very much against the universal view that the measles otitides are caused by the primary exanthem. The pus taken from the depth of the exterior meatus, as well as from the antrum, mastoid process, and extradural abscesses, contained the same staphylococcus.

New York Medical Journal.

August 18.

6 *A Model for a New Ophthalmotrope; the Gonioscope. Some Phases of Ocular Motility. (To be concluded.) D. K Shute, Washington, D. C.
7 Treatment of Cancer of the Rectum. S. G. Gant, New York
8 Case of Vesicular Keratitis with a Filamentous Formation of the Detached Epithelium. B. Chance, Philadelphia.
9 Present Status of the Treatment of Appendicitis; the Family Physician's Responsibility. R. C. Coffey, Portland, Ore
10 Our Duties as Citizens in the Prevention of Tuberculosis. G H. Kress, Los Angeles, Cal.
11 Report of the Year's Work in the Gynecologic Service of the Samaritan Hospital, Including the Technic. F. C. Hammond, Philadelphia.
12 Value of the Bier Treatment. E. Adams, New York.
13 Scientific Murder. J. E. Herman, Brooklyn.
14 An Observation Chart. J. H. Barach, Pittsburg, Pa.

6. The Gonioscope; New Ophthalmotrope.—Shute's device is constructed on the same principle as Landolt's, but differs from the latter in its simplicity, and in the case with which it can be constructed by any one out of very simple materials, such as an india-rubber ball, a hat pin and a tobacco box. It also differs from Landolt's apparatus in the fact that the rubber ball can be so easily painted, or marked with ink and made to serve as a model of an eyeball, instead of looking like a mere frame work of rings as does Landolt's; it also has the great merit of concentrating the attention of the student on a single axis at a time instead of distracting his attention by the presence of a number of very different axes. It can be made to show the rotation of the eye about axes in Listing's plane, thus giving lessons in physiology; or it can represent movements of the eyeball about axes perpendicular to individual muscle planes and thus out of Listing's plane so that the pathology of ocular motility can be investigated with the greatest accuracy. It readily permits also a study of ocular rotations under the influence of internal and external recti when attached to the eyeball, either too high or too low. Lastly, it differs from Landolt's instrument, in that it was primarily constructed for the purpose of demonstrating the necessity of diversity, instead of community of axes for the obliques on the one hand, and the superior and inferior recti on the other hand. In short, the instrument differs from all others, Shute states, in its extreme simplicity, flexibility and adaptability for demonstrating all the known ocular rotations on sound physiologic principles. The reader is referred to the original article for a complete description of the apparatus and the method of its use.

Boston Medical and Surgical Journal.

August 16.

15 *Two Cases of Gastrosuccorrhea or Gastric Hypersecretion Associated with Atrophic Cirrhosis of the Liver. H. F. Hewes. Boston.
16 *Serum Treatment of Exophthalmic Goiter. G. A. Waterman, Boston.
17 Introduction to the Study of the Fundamental Cause of Splanchnoptosis—Abdominal Incompetence. A. C. Victor, Boston.
18 Incontinence of Urine. C. G. Kerley, New York.

15. **Gastrosuccorrhea Associated with Atrophic Cirrhosis of Liver.**—The special points of interest in connection with the few cases reported by Hewes are the following: The cases represented, in their special symptomatology, the history of the symptoms and the character of the findings revealed by the examination of the contents of the stomach, typical cases of gastrosuccorrhea, one of continuous hypersecretion, the other of intermittent or periodic hypersecretion; and this stomach symptomatology represented, at the time the cases first came under observation, the prominent and only definite symptoms present. The special pathologic conditions of the stomach, with which hypersecretion such as was present in these cases is ordinarily associated, that is, which most frequently prove to be the primary causes of hypersecretion, gastrectasis, or ulcer of the stomach, were not present in these cases. This fact was proven in the first case, that of continuous hypersecretion, by the findings at autopsy in addition to the results of clinical examination. In the second case it was indicated by the results of clinical examination. The pathologic condition of cirrhosis of the liver was present in both cases. In the first case atrophic cirrhosis of advanced degree was found at autopsy. In the second case the diagnosis of cirrhosis was based on the finding of an enlarged liver plus the marked alcoholic history of the patient.

16. **Serum Treatment of Exophthalmic Goiter.**—The serum in the treatment of the five cases reported by Waterman was derived from blood drawn from the jugular vein of a goat two weeks or more after the removal of the thyroid gland. It was invariably used subcutaneously. The first patient received the serum in 1 c.c. doses, about five times a week, for the first three months, and then 2 c.c. doses, about twice a week, for the next three months, after which time 3 c.c. were given every eight or ten days for two months. The patient has been free from any signs of the disease for a year and a half. The pulse varies between 70 and 75. The second patient was given daily doses of 2 c.c. of serum for a week, when a general urticaria developed necessitating the discontinuance of the treatment for two weeks. At the end of this time she was given daily doses of 1.5 c.c. for a period two weeks, and then 3 c.c. once a week for two months, and once a month for three months. Six months after the treatment was stopped there were no signs of the disease and the patient was well in every respect. The same treatment was given in the remaining three cases, but not with equally good results. Two of the patients were improved, while one remained unimproved. In one of the improved patients the treatment was continued for eight months, and it is interesting to note that the hair of this patient has become dry and brittle and is turning gray. In none of these cases was the disease of more than four years' duration. The two patients who were cured were of one year and four years' duration, respectively.

Lancet-Clinic, Cincinnati.

August 18.

19 Some Features of Gastric Ulcer. W. D. Haines, Cincinnati
20 Address to Graduating Class of the Medical College of Ohio. A. Ravogli, Cincinnati.

St. Louis Medical Review.

August 11.

21 An Unusual Case of Glaucoma. J. M. Ball, St. Louis.
22 Origin and Heredity of Matter. (To be continued.) Wright, New York.

New Orleans Medical and Surgical Journal.

August.

23 Affections Characterized by Gastroenteric Catarrh. G. F. LaRoque, Richmond.
24 Abortion. T. A. Roy, Avoyelles Parish.
25 Typhoid Fever. P. M. Thornhill, Arcadia.
26 Anomalies of Typhoid Fever. J. Atkinson, Arcadia.
27 *Surgical Treatment of Prostatic Hypertrophy. S. P. Dela New Orleans.

27. **Treatment of Prostatic Hypertrophy.**—Delaup reviews the operative treatments for prostatic hypertrophy that have been found to be the best, and concludes as follows: A routine method is not applicable to the treatment of prostatic hypertrophy; every case is a law unto itself, and the treatment will depend on the various conditions presented in each individual case. The prostatic suffering from persistent severe cystitis, or difficulty or pain in catheterism, should early receive operative relief; delay is destructive to his urinary apparatus, and hence to his chance for life and comfort. The dangers attendant on the daily catheterism are greater than those of a radical operation performed at the onset of the symptoms caused by the obstruction, and the earlier the operation the fewer will be the complications encountered. The choice of operation must be determined partly by the patient's vigor and partly by the condition of the bladder and kidneys. In patients too weak to withstand an operation, suprapubic drainage is advised, and if improvement follows this procedure, then a radical operation is indicated. The proper time to perform a radical operation is reached as soon as it becomes necessary for a patient to resort to daily catheterism. A perineal prostatectomy is best suited for those patients in whom the enlargement of the lateral lobes has a tendency to progress toward the rectum, to obstruct the urethra; or to project backward into the bladder. This method is applicable in fully 90 per cent. of all cases, and is the surest, the safest and probably the quickest method of curing the patient. In early operations the results are most satisfactory, recovery rapid, the mortality varying between 5 and 7 per cent. Suprapubic prostatectomy, combined with perineal drainage, is wisest when there is an enormous intravesical hypertrophy of the lobes, especially if the condition is associated with tumor formation projecting well back into the bladder. A prostatectomy is usually attended with more risk than the Bottini operation, and the convalescence is more prolonged. Therefore, in suitable cases in which the general health and kidneys contraindicate more radical measures, and also in those cases in which prostatectomy is refused, the Bottini operation is especially indicated.

The Canada Lancet, Toronto.

August.

28 *Nostrums and Proprietary Medicines. J. Hunter, Toronto.
29 Medical Thoughts, Facts, Fads and Fancies. J. S. Sprague, Stirling, Ontario.
30 Sir Charles Hastings, the Founder of the British Medical Association. J. Ferguson, Toronto.

28. **Nostrums and Proprietary Remedies.**—Hunter prescribes conditions as they exist and suggests remedial measures. He says that materia media, pharmacy and therapeutics, as compared with the other branches of medicine, are in a morbid state. Our knowledge of these is, he declares, lamentably defective, the literature is rankly unscientific, and our practice empirical and eratic. The first thing necessary in the way of a remedy is a radical change in the curricula of our medical colleges. The most competent teachers should be provided, and these should be enthusiasts. There is too much nihilism in therapeutics. Time and facilities for teaching these sub-

jects profitably and intelligently should be provided. The importance and value of a thorough knowledge of materia medica and therapeutics should be indellibly impressed on the mind of every medical student. Therapeutics should be taught not only rationally and practically, but in minute detail. The mere enumeration of principles is not sufficient. A suitable selection of drugs should be made and the properties of these thoroughly learned, in order that the student may know how to prescribe them so as to get their full medicinal effects. When physicians have learned the art of prescribing standard remedies in an attractive and palatable form the field of rational and scientific therapeutics will be reclaimed.

The individual physician should replenish his library with the best literature to be procured on these subjects. He should not be led astray, Hunter says, by mercenary or fraudulent literature into prescribing nostrums whose composition is unknown. Every physician should take the time necessary to become thoroughly acquainted with all the drugs and remedies he needs to use. Every physician should point out to his patients the evils arising from the indiscriminate use of any drug or remedy. Medical associations and societies should use every means at their command to mitigate these evils. Far more attention should be given to materia medica and therapeutics at medical meetings. Committees should be appointed to investigate all new remedies. Medical journals should positively refuse to advertise any preparation, drug or compound whose composition and qualities are unknown. No medical journal, manufacturer or exploiter has any right to imperil the lives of others for gain or any purpose whatever.

Chicago Medical Recorder.

August 15.

31 Action of Antiseptics on the Parasite. A. Gehrmann, Chicago.
32 Fifty Bacteriologic Tests of Hands, Brushes, Gloves, Pasteur Filtered Water, Steam and Formaldehyd Sterilizers and Formaldehyd Disinfection of Rooms. A. Goldspohn, Chicago.
33 Physical Examinations for the United States Army. C. L. Wheaton, Chicago.
34 *Indications for the Surgical Removal of Tonsils and the Best Methods for Doing So. O. J. Stein, Chicago.
35 Intravenous Injections of Mercury as a Therapeutic Test for Syphilis. W. F. Bernart, Chicago.
36 Hemorrhoids. C. J. Drueck, Chicago.
37 Treatment of Abortion and Miscarriage. M. Whise, Chicago.

34. Removal of Tonsils.—Stein believes that the best method of surgical treatment of the tonsils is the one that insures the possibility of the removal of all of the glands. He employs a procedure that combines the best features of two of the oldest and best known methods—namely, dissection and use of the tonsillotome. After the tonsil and the faucial pillars have been anesthetized, the gland is dissected free from its mucus and any fibrous attachment. The important feature of this part of the operation is that the gland must be deeply and firmly engaged in the tenaculum forceps in order to secure a very firm hold on the mass when traction is brought to bear. The traction is at first inward, toward the mouth, downard and backward. This is furthered by a backward rotation of the engaged forceps. The attachments are now all at extreme tension, and with a small sharp bistoury or small curved scissors incision is commenced well up in the epitonsillar fossa and carried down along the anterior edge of the palatoglossal muscle, hugging the capsule and avoiding the muscular fibers. Any posterior attachments are severed in the same manner, but by reversing the rotation of the engaged forceps to a forward position. Special effort should be directed to the liberation of the large mass of the gland found tucked away in the epitonsillar fossa. The fenestra of a Mackenzie pattern tonsillotome is now made to encircle the gland close to its posterior attachment, and while strong traction with the forceps is continued, the blade of the tonsillotome is driven forward, severing at one stroke the remaining portions. In place of the tonsillotome a special pair of curved scissors, or the cold or electric cautery wire loop, may be used with success.

Journal of Cutaneous Diseases, New York.

August.

38 *Treatment of Epithelioma by Means of Caustic Potash. A. Van Harlingen, New York.
39 Length of the Primary Incubation Stage of Syphilis. A. Post, Boston.
40 Arsenic in Pityriasis Rubra Pilaris. M. L. Heidinsfeld, Cincinnati.
41 *Case of Lupus Erythematosus in Early Childhood. J. F. Schamberg, Philadelphia.

38. Treatment of Epithelioma by Caustic Potash.—Van Harlingen records the results he has obtained in the treatment of 55 cases of epithelioma by the use of caustic potash. The ages of the patients ranged between 35 and 94 years. Thirty patients were males and 25 were females. Almost all tumors were located on the face. The left cheek was the seat of the lesion in 10 cases; the left side of the nose in 9 cases; the right side of the nose, the right cheek and the right temporal region, 4 cases of each; left cheek and left temporal region, 3 cases each; left lower eyelid, 3 cases; each ear, 1 case; each side of the upper lip, 1 case. Most of the lesions were quite small, the largest measuring 3 cm. in diameter. In almost all the cases entire reliance was placed on the caustic potash. Occasionally, slight relapses, or what appeared to be such, were treated with one of the mineral acids, formalin, etc. The wounds healed in from ten days to eight weeks, the average duration being four weeks. In the majority of cases so treated, the results were entirely satisfactory. In seven instances, the treatment was unsatisfactory or a complete failure, from several causes. Van Harlingen concludes that cases of epitheliomata of the skin that display small, well-defined pearly lesions, from one-half to 1 or even 2 cm. in diameter, found chiefly on the face and adjacent parts, are best treated by the use of caustic potash. Larger lesions are best treated by the *x*-ray, but here caustic potash may be used to soften and to dissolve the horny epithelium and in some cases as an adjuvant. In cases treated with caustic potash the use of the *x*-ray does not appear to hasten the process of reparation or to modify to any marked degree the cicatrix resulting from cauterization.

41. Lupus Erythematosus in Early Childhood.—The patient referred to by Schamberg was four years and three months old when the disease began. The first lesion appeared on the right cheek in the form of a pimple. This gradually increased in size, and later another lesion appeared on the left cheek. There is no dilatation of sebaceous glandular orifices. The case represents the vascular type of the disease.

Western Medical Review, Lincoln, Neb.

July.

42 *Collateral Circulation, Following Ligation of the Femoral Artery. F. Rustin, Omaha.
43 Neuralgia. F. E. Coulter, Omaha.
44 Intraocular Foreign Bodies. W. M. Cowgill, Lincoln.
45 Surgical Fever. J. M. McLeod, Lincoln.

42. Collateral Circulation Following Ligation of Femoral Artery.—Rustin reports a case of successful ligation of the femoral artery for popliteal aneurism and in which two years later he did a hip-joint amputation for a septic gonorrheal knee. The aneurism was of traumatic origin following a gunshot wound. Two silk ligatures were brought around the femoral artery, about two inches below the profunda and about one-half inch apart. The artery was not cut between the ligatures. For a few days after the operation there was some swelling and edema of the leg and foot; then the leg gradually became normal; the tumor diminished in size and there was every evidence of complete return of circulation below the ligature. As stated, a hip-joint amputation was done two years later. The amputated leg was preserved and the artery injected. The section showed that the main line of circulation was carried on through the anastomosis of the profunda artery, which was very much enlarged. The perforating arteries of the profunda were large and tortuous and anastomosed freely with the ascending branches of the popliteal artery. The external circumflex artery anastomosed freely with the superior articular branch of the popliteal artery. There were few anastomoses between the external circumflex branch of the profunda with the vessels in the gluteal region. Rustin says that at the time of operation he noticed that there were many small vessels, more than are usually encountered in the ordinary hip-joint amputation. The original aneurismal sac was obliterated, and its only remnant was a cord-like mass about four inches long and an eighth of an inch in diameter.

Ohio State Medical Journal, Columbus.

August 15.

46 *Stiff and Painful Shoulders. E. A. Codman, Boston.
47 Syphilis in Relation to Crime. A. Ravogli, Cincinnati.
48 Experience in Treating Diseases of the Lachrymal Duct Without Operation. W. H. Snyder, Toledo.
49 *Case of Extrauterine Gestation; Operation, a Living Child Delivered Weighing Three Pounds. H. T. Sutton Zanesville.
50 Points in the Hygiene and Sanitation of Rearing Children. D. S. Hanson, Cleveland.
51 Address of Welcome Delivered Before the Ohio State Medical Association at Canton, Ohio, May 9, 1906. J. F. Marchand, Canton.
52 Report of the President of the Ohio State Medical Association. T. C. Martin, Cleveland.
53 Cesarean Section—Twin Pregnancy, Multiple, Fibroids, Hysterectomy. J. F. Baldwin, Columbus.

46. **Stiff and Painful Shoulders.**—Under this title Codman considers cases of obscure lesions of the shoulder joint, often called rheumatism, fibrous ankylosis, paralysis of the deltoid, etc., the result of a blow, sudden muscular exertion, pressure, overuse or inaccustomed use. Codman believes that the trouble is due to subdeltoid adhesions and that the logical treatment is breaking up of these adhesions and then preventing their reformation by means of a splint which holds the arm in abduction and external rotation, thus bringing raw surfaces opposite healthy ones. The frame of the splint he uses is made of light iron wire, one-quarter of an inch in diameter and stiff enough to maintain its form and to carry the weight of the arm. Sufficient cotton wadding to thoroughly pad it is bandaged over it, and the whole is covered with cotton or a linen cloth. The splint should be long enough to extend from the axilla to the seat of the chair on which the patient sits. It is best held in position by a belt around the pelvis and a figure of 8 flannel bandage about the shoulder, crossing back of the neck. The pad should be placed on the opposite axilla to prevent excoriation of the skin by the bandage. The splint passes along the under surface of the arm, which is elevated in front of the body on a level with the head and slightly flexed, to the axilla, and then down the side of the chest over the hip to a point where it will just touch the seat of the chair on which the patient sits.

49. **Extrauterine Gestation.**—Sutton reports an unusual case of this kind. The patient was a primpara, 26 years of age. At three months uterine pains became so severe that the attending physician advised an attempt to empty the uterus, but he failed to deliver the fetus. At six months the same performance was gone through with by another physician, with the same result. At eight months she was taken very ill with pain over the abdomen, nausea, vomiting and great weakness. An extrauterine gestation was diagnosed and an operation advised. The abdominal incision brought into view a ruptured sac with a head presentation. A living child was delivered. A supravaginal hysterectomy was then done and the sac and uterus removed together. The patient died from shock thirty-six hours afterward. The child lived twelve hours. It was perfectly formed and weighed 3 pounds.

American Journal of Urology, New York.

August.

54 American Urological Association. F. C. Valentine, New York.
55 President's Inaugural Address to the New England Urological Society. O. C. Smith, Hartford, Conn.
56 *Sequelæ of Prostatectomy. R. F. O'Neil, Boston.
57 *Results of Prostatectomy. H. Cabot, Boston.
58 Indications, Contraindications and Management of Prostatectomy. C. G. Cumston, Boston.
59 *Sigmate Ureteral Obstruction. A. E. Gallant, New York.
60 Intravesical Operations with the Aid of the Cystoscope. H. Meyer, San Francisco.

56. **Sequelæ of Prostatectomy.**—O'Neil reviews 115 cases of perineal and 93 cases of suprapubic operation recorded by Proust. Of the perineal operations, 8 patients died, of the remaining 107, 55 cases had some postoperative condition, often several, orchitis occurring 14 times, fistulæ 14 times, of which 5 were temporary, residual urine 20 times. In 10 cases there was marked frequency of urination. In 30 other cases, only 8 of which are included in the 55 because of other conditions, a moderate amount of frequency of urination was present, that is, from two to four times at night and every three hours during the day. The beginning of micturition was given in 66 cases; longest 70 days after operation; shortest 5 days; average 26 days. Of the 93 suprapubic cases, 11 patients died. Of the remaining 82, 12 patients had sequelæ (this includes 2 cases of shock and 1 of hemorrhage), 4 suffered from frequency of urination, 2 from slight residual urine, 1 from abscess, 2 had orchitis, one of the latter cases proving fatl. Micturition began on an average 17 days after operation, the longest time being 45 days after operation, the shortest three days. By comparing the two series of cases, it is evident that the perineal route is much the more liable to troublesome sequelæ.

57. **Results of Prostatectomy.**—Cabot uses as a basis for his study the reports of surgeons of experience, who report not less than 14 cases, one year or more after operation. Of 495 patients operated on, 388, or 78 per cent., were cured. The percentage of cures was much greater in the cases of complete retention than in those of incomplete retention; 85 per cent. in the former, and 40 per cent. in the latter.

59. **Sigmate Ureteral Obstruction.**—Gallant cites the history of a patient suffering from an abdominal tumor, which apparently originated in the pelvis, but proved to be a hydronephrotic kidney induced by prolapse and the subsequent formation and agglutination of an s-shaped flexure of the ureter at its junction with the renal pelvis. Points of interest which came up during the course of the case were (a) the complete restoration of the ureteral caliber as soon as the inflammatory bands were removed; (b) the resumption of secretory function shortly after the kidney was replaced and the ureter freed; (c) the gradual recurrence of obstruction, with infection of the kidney and pelvis; (d) the excellent work of the remaining kidney after the affected kidney had been removed.

The Post-Graduate, New York.

August.

61 A Few Wounds Observed During the Japanese-Russian War. C. Lynch, U. S. Army.
62 *Some Operations of Unusual Interest on Women. A. Brothers, New York.
63 Cases of Hematuria. F. Cabot, New York.
64 African Recurrens. R. Koch, New York.

62. **Operations of Interest.**—The first case reported by Brothers is one of appendicectomy performed on a woman, pregnant three and a half months, without interrupting pregnancy. The appendix contained three fecal concretions. The second case was one of LeFort's operation for vaginal hernia following hysterectomy in a woman 60 years of age. The result was perfectly satisfactory. In the third case the uterus and vagina were removed *en masse* by vaginal hysterectomy for the cure of prolapsus uteri in a woman 50 years old. The patient recovered. The fourth case was one of perforation of the intestine by a fish bone. The patient, a woman, 60 years old, had apparently been cured two and a half years previously of tuberculous peritonitis by incision and drainage. A sinus leaking during the six months following left her with a ventral hernia. After considerable difficulty the intestines were separated from the anterior abdominal wall and from each other until a large cavity, containing about 8 ounces of a straw-colored liquid, was perforated with the finger. While separating adhesions an ulcer of the intestine presented and projecting from its center was a sharp point which proved to be a fish bone measuring nearly 1¼ inches in length. After depressing and inverting the ulcer its base was drawn together by means of a circular tobacco-pouch suture passed around the margin of the ulcer. To reinforce this suture a few extra Lembert sutures were passed in a second tier, completely burying the first suture. The hernia was treated in the usual manner.

Louisville Monthly Journal of Medicine and Surgery.

August.

65 Louisville's Milk Supply. R. McD. Allen, Lexington.
66 Milk as an Infant Food. R. B. Gilbert, Louisville.
67 Chemistry of Milk. P. F. Barbour, Louisville.
68 Constipation. D. O. Hancock, Henderson.
69 *Veratrum Viride in Eclampsia. J. W. Fletcher, Princeton.
70 *Thoughts on the Symposium on Puerperal Eclampsia. C. G. Thornton, Lebanon.
71 Case of Hyperemesis Gravidarum. E. S. Bramlett, Oxford.

69. **Veratrum Virid in Eclampsia.**—Fletcher regards veratrum as much of a specific in eclampsia as is quinin in malaria. He administers the veratrum hypodermically in doses of from 15 to 65 minims, depending on the severity of the case. He has also used it with benefit in cases of infantile convulsions,

delirium tremens, pleurisy, pneumonia, sunstroke, gastralgia, enteralgia and other conditions accompanied by spasmodic pain.

70. Venesection in Puerperal Eclampsia.—Thornton advocates venesection, withdrawing at least a quart of blood by actual measurement. He does not think it necessary to inject saline solution because of the ever present edema.

California State Journal of Medicine, San Francisco.

June.

72 President's Address, Thirty-sixth Annual Session of the Medical Society of the State of California. R. F. Roony, Auburn.
73. Abdominal Exploration. C. M. Cooper. San Francisco.
74 Liver Infection from Appendicitis. W. S. Thorne, San Francisco.
75 Football Injuries. R. L. Wilbur, Stanford University.
76 Importance of More Careful Observation of Patients After Operations on the Pelvic Viscera. C. G. Bull, Alameda.
77 General Diseases as a Cause of Diseases of the Eye. W. W. Ward, Woodland.

Physician and Surgeon, Detroit and Ann Arbor.

July.

78 Rural City Milk Supplies and Their Relation to Infant Feeding. Home Modification Versus Laboratory Modification. A. M. Cook and D. M. Cowie, Ann Arbor.
79 Lessons in Longevity. J. S. Caulkins.
80 Necrosis of the Mastoid Process. W. J. Benn, Bay City, Mich.

Virginia Medical Semi-Monthly, Richmond.

July 27.

81 Chronic Indigestion. J. E. Walsh, Washington, D. C.
82 Salt Action and Salt Solutions. A. L. Muirhead, Omaha, Neb.
83 Neurasthenia. J. D. Bartram, Ashland, Ky.
84 Tumors of the Intestine. G. P. LaRoque, Richmond.
85 Ourselves as Others See Us. J. R. Cook, Fairmont, W. Va.
86 Patholcgic Findings and Causation of Eclampsia and Hyperemesis. G. Baughman. Richmond.

August 10.

87 Tuberculosis of the Bladder and a Plea for Early Diagnosis. F. R. Hagner, Washington, D. C.
88 Diagnosis and Treatment of Tuberculous Bone and Joint Lesions, from the General Practitioner's Standpoint; Question of the Responsibility for Deformity. R. T. Taylor, Baltimore.
89 Observations in the Treatment of Continued Fever. A. J. Hetherington, Phoenix, Ariz.
90 Cases of Functional Anuria. C. W. Astrop, Surry, Va.
91 Cancer; Its Cause and Spread. F. A. Butler, Harvard, Neb.
92 Adrenalin Chlorid in Variola. L. Eliot, Washington, D. C.
93 Compound Fracture of Great Toe and Contusion of Foot Followed by Phlegmonous Erysipelas. D. W. Scott, McDonough, Ga.

American Journal of Surgery, New York.

August.

94 Malignant and Non-Malignant Growths. W. S. Bainbridge, New York.
95 Surgical Treatment of Gonorrhea in Women. J. W. Bovée. Washington, D. C.
96 Sociologic Aspects of Gonococcus Infection. P. A. Morrow, New York.
97 Intussusception. W. L. Estes, South Bethlehem, Pa.
98 Bandage for the Stump After Amputation Through the Thigh H. M. Hays, New York.

Texas State Journal of Medicine, Ft. Worth.

August.

99 Ocular Manifestations of Nephritis. J. O. McReynolds, Dallas.
100 Symptoms and Diagnosis of Acute Nephritis. R. T. Morris, Houston.
101 Nephritis Complicating Typhoid Fever. J. M. Frazier, Belton.
102 Treatment of Acute Nephritis. J. W. Scott, Houston.
103 Diagnosis and Treatment of Chronic Nephritis. M. M. Scott. Brownwood.
104 Etiology of Acute Nephritis. S. C. Red, Houston.
105 Case of Multiple Sclerosis G. H. Moody, San Antonio.

Albany Medical Annals.

August.

106 An Address to the Graduating Class of St. Peter's Hospital Training School for Nurses. H. Hun, Albany.
107 Etiology and Treatment of Hemorrhoids; a Review. D. C. Moriarta, Saratoga Springs, N. Y.
108 Sanitary Department of Armies and the Military Medical Officer. J. V. R. Hoff, U. S. Army.
109 Victims of the Medicis and the Borgias in France from a Medical Standpoint. C. G. Cumston, Boston.

Mississippi Medical Monthly, Vicksburg.

August.

110 The Physician and Some of His Duties. J. W. Henderson, Lyon.
111 Benefits to be Derived from a Well-Organized Country Society. A. C. Norman, Cato.
112 Light Rays. J. W. Unger, West Point.
113 The State of Alkaloidal Medicine Versus the Old Galenical Preparations. F. E. Lee, Aberdeen.
114 Tuberculosis. W. A. Cox. Pascagoula.

Buffalo Medical Journal.

August.

115 Address to the Graduates in Medicine, Law, Dentistry and Pharmacy, at the Sixtieth Annual Commencement of the University of Buffalo, N. Y., June 1, 1906. E. N. Brush, Baltimore.
116 Story of the Discovery of the Circulation. R. Park, Buffalo.
117 Some of the Leading Men and Events in the History of American Medicine. F. Thoma, Buffalo.

Maryland Medical Journal, Baltimore.

August.

118 Report of the Women's Venereal Department of the Johns Hopkins Hospital Dispensary. F. Pollock, Baltimore.

Journal of the Medical Society of New Jersey, Orange.

August.

119 Nutrition During the First Year. H. L. Colt, Newark.
120 Digestion of Fats, Proteids and Carbohydrates in the First Year J. F. Bell, Englewood.
121 Suitable Diet During the Second Year. M. P. Brewster, Grantwood.
122 Second Year Disorders of Infantile Digestion. A. McAlister, Camden.

Kentucky Medical Journal, Louisville.

August.

123 Acute Meningitis. J. H. Souther, Three Forks.
124 Cerebral Thrombosis. D. A. Campbell, Bowling Green.
125 Fractures of the Humerus. G. A. Hendon, Louisville.
126 "Patent" and "Proprietary" Remedies. H. H. Roberts, Lexington.

The Alienist and Neurologist, St. Louis, Mo.

August.

127 Adolescent Insanity (Dementia Præcox). E. Trommer, Hamburg.
128 Training of Mentally Defective Children. M. W. Barr, Elwyn, Pa.
129 Psychoencephalonasthenia or Cerebrasthenia Simplex, and Psychoencephalonasthenia or Cerebrasthenia Insaniens. C. H. Hughes, St. Louis.
130 Mixoscopic Adolescent Survivals in Art, Literature and Pseudo-Ethics. (To be continued.) J. G. Kiernan, Chicago.
131 A Case of Reflex Epilepsy. C. E. Ingbert, Independence, Iowa.
132 Erotic Symbolism. (To be continued.) H. Ellis, Carbis Water, Lelant, Cornwall England.
133 A Morphiamaniac on Trial for Murder. A Medicolegal Study of the Matthews Case. T. D. Crothers, Hartford, Conn.
134 Sadism. D. S. Booth, St. Louis.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

August 4.

1 Development of the Treatment of Uterine Fibromyomata within the Last Twenty-five years. F. W. N. Haultain.
2 *Dysmenorrhea. A. Routh.
3 *Series of Fifty Consecutive Abdominal Sections. R. P. R. Lyle.
4 *Obstetric Experiences. J. Lindsay.
5 Evaporation of Chloroform During Inhalation. A. G. Levy.
6 Landry's Paralysis. E. MacNamara and J. Bernstein.
7 *Case of Abdominal Fissure. H. Stevenson.
8 Ascaris Lumbricoides as Cause of Appendicitis. A. Castellani.

2. Dysmenorrhea.—In the treatment of dysmenorrhea due to anemia, Routh has found the following an excellent prescription to be taken, after food, three times daily:

℞.	Liq. ammoniæ acetatis	ʒii	8	
	Ferri et ammoniæ citratis	gr. vii		5
	Tr. calumbæ	Mxxx	2	
	Liq. potass. arsenicalis	Miii		2
	Magnesii sulph. q. s.			
	Aquæ chloroformi ad	℥i	30	

M. Fiat haustus.

A week before the period is due, ten grains of bromid of potassium may be added to this combination, or salicylate of soda, if a rheumatic tendency is present. For the relief of pain Routh has found the following very serviceable:

℞.	Tinct. cardamomi co.	ʒss	2	
	Tinct. zingiberis fort	Mc		3
	Liq. ammoniæ acetatis	ʒiv	16	
	Antipyrini	gr. v		3
	Potassii bromid	gr. xv	1	
	Aquæ caryophylli ad	℥i	30	

M. Fiat haustus.

A dose of this is to be taken when the pain is present, and repeated, if need be, in two hours. If stronger sedatives are required, a cachet containing three grains each of antipyrin, phenacetin and citrate of caffein has been found to answer better than larger doses of the same drugs separately. If the extremities are cold, or if the patient feels chilly, prompt relief may be afforded by the inhalation of amyl nitrate (3 minims), or by taking nitroglycerin (grain 1/100). In congestive dysmenorrhea, where the antispasmodics fail, extract of cannabis indica (grain 1/3) or a combination of hydrastis, belladonna and bromid of potassium or sodium afford prompt relief. In cases of pelvic congestion with cold extremities and cold skin, Routh has found nitroglycerin to be remarkably effective. Ten grains of the compound powder of ipecac, combined with 30 grains of bromid of potassium, is often very useful if the patient is seen towards night time. Hot douches, local applications of iodin, glycerin tampons, gelatin pessaries, and assuming the genu-pectoral position for ten minutes at bedtime, are also useful means of emptying the pelvis of venous blood.

3. **Fifty Consecutive Abdominal Sections.**—Lyle reports 50 consecutive abdominal sections performed in an ordinary attic of a small (six beds) hospital, under the most restricted conditions and with the simplest technic. Every possible precaution was taken to avoid sepsis or shock. There was only one death.

The following operations were performed: Ovariotomy, 17; supravaginal hysterectomy, 8; salpingectomy, 5; salpingo-ovariectomy, 4; enucleation of broad ligament cyst, 4; celiotomy, 4; myomectomy, 3; ventrofixation, 3; panhysterectomy, 2. Six patients operated on for rupture ectopic gestation made uninterrupted recoveries. The one patient who died had a suppurating multilocular ovarian cyst with purulent peritonitis. Lyle concludes that his good results may be ascribed to a correct diagnosis, simplicity in technic, use of few instruments and appliances, limitation of size of abdominal incision, correct adjustment of all cut peritoneal surfaces, complete closure of the abdominal cavity without any drainage, and the free use of normal saline solution in cases in which purulent material is accidentally spilled in the pelvis or abdomen during the performance of an operation.

4. **Obstetric Experiences.**—Lindsay discusses his experiences with 5.845 cases of labor distributed over a period of 47 years. These cases occurred in his own practice, although about half of the number were in charge of his assistants. More than half of the deliveries were conducted with the patient on her knees, holding on by a chair, the woman refusing to go to bed. No use was made of antiseptics, except an antiseptic oil or grease for the finger, hand or instruments. The most careful asepsis was insisted on. There was no shaving of the parts, no washing, no syringing. Lindsay did all his work without uncovering the patient, except when using instruments or when anything unusual arose. During his first ten years of practice, when antiseptics had no place in the obstetric bag, he did not have a death. His first death was the result of puerperal fever, imported by a nurse. Among this total number of cases there were 2.309 forceps cases; 19 cases of version; 12 cases of placenta prævia; 13 cord presentations; 40 breech or feet presentations; 71 cases of twins; 3 cases of triplets; 52 occipito-posterior presentations; 13 face presentations; 2 cases of inversion of the uterus; 2 cases of hydatidiform mole; 8 monstrosities; 126 premature births; 3 cases of rupture of the uterus; and 5 cases of indentation of the frontal bone, due to forceps delivery.

There were 28 deaths in this series of cases, only one being the result of puerperal fever. Other causes of death were erysipelas, pneumonia, measles, phlebitis, peritonitis, convulsions and embolism. In the entire series there were only 6 cases of rupture of the perineum; none were complete.

7. **Fissure of Abdominal Wall.**—The subject of the report made by Stevenson was a seven to eight months' premature female child, first seen about two hours after birth. A large mass of bowel lay exposed outside of the abdomen without peritoneal or other covering. It consisted of all the large intestine and several inches of the small, with a patent Meckel's diverticulum about two inches in length. The fissure was between one and two inches in length. Stevenson removed the diverticulum flush with the bowel and closed the fissure. The child rallied well from the operation. The stitches were removed on the fifth day, when everything seemed well. On the sixth day the child became jaundiced and the evening of the eighth day it died.

The Lancet, London.

August 4.

9 Pathology of Skin Diseases. G. S. Woodhead.
10 Removal of a Cerebral Tumor (Endothelioma) which had Invaded the Overlying Cranial Bone. H. G. Barling.
11 *Blood Pressure and Pigmentation in Addison's Disease. A. R Short.
12 Appointment of Qualified Women with Special Reference to the Hygiene and Feeding of Infants. J. S. Cameron.
13 Caterpillar Rash. J. C. Thresh.
14 Some of the Pseudo-Parasites of Cancer. A. S. Grunbaum
15 *Case of Acute Rheumatism; Hyperpyrexia; Recovery. E. B Smith.
16 *Treatment of Catarrhal and Gangrenous Dysentery. C. B S Amos.

11. **Addison's Disease.**—Short summarizes his paper as follows: 1. The symptoms of Addison's disease are due to vasomotor paralysis. This is due to absence of adrenalin, the normal excitant of the sympathetic nerve endings, from the blood. 2. The pigmentation is due to vascular relaxation of the skin causing exaggerated functional activity of the pigment cells. 3. The most promising line of treatment, on theoretical grounds, is the administration of vasoconstrictors of prolonged action; digitalin has given good results in one case.

15. **Hyperpyrexia in Rheumatism.**—The highest temperature, by rectum, in the case reported by Smith was 109.3; highest mouth temperature, 107.2. Cold baths were employed to reduce the temperature, and to these is ascribed the recovery of the patient.

16. **Treatment of Dysentery.**—Amos has had very satisfactory results in the treatment of dysentery from the employment of Manson's method of administering ipecac, associated with the following diet: All his patients are Africans, Asiatics, or Turks, and nearly all of them evince a very great repugnance to milk diet, frequently starving themselves for days rather than take it. Moreover, unless the milk is greatly diluted, hard curds constantly appear in the patients' stools. He has therefore abandoned a fluid diet in all cases of dysentery and has had recourse to a drier diet which the patients relish and take readily, even when in a most serious condition. They receive half a pint of milk at 7 a. m., when those without hemorrhage also have a small piece of bread; at 11 a. m. a plate of finely mashed rice, potatoes, lentils, macaroni, or beans, over which a little meat soup has been poured, is served. Convalescents also have a small piece of bread. At 5:30 p. m. they have a similar meal. During the night they have a pint of milk diluted with water to the patient's liking. Those who are very weak have in addition each day the whites of four eggs beaten up with brandy or water. The yelks of eggs they can not digest. No pure water is given, but a 1 in 3,000 solution of lactic acid is placed at the bedside for them to sip at will. With this dietary blackened tongues become moist and clean in one or two days, thirst disappears, no undigested food appears in the stools, and no difficulty is found in inducing the patients to take nourishment.

Indian Medical Gazette, Calcutta.

June.

17 Extraction of the Lens in Its Capsule; an Experience of 311 Cases, and a Method of Recording Cases. G. T. Birdwood
18 Irrigation in Cataract Extraction. R. H. Elliott.
19 *Practical Points About Vaccine Lymph. J. Entrican.
20 *Value of Revaccination. R. D. Macgregor.
21 Splenic Abscess in a Malarial Liver. A. R. S. Anderson.
22 Cysticercus Cellulosæ of Tongue, with a Note on the Helminthology of One of the Madras Jails. C. L. Williams.

19. **Practical Points About Vaccine Lymph.**—Enterican describes an apparatus by means of which it is possible to fill hundreds of capillary tubes with vaccine lymph at one time with a great saving of lymph. The apparatus has been in use for over a year and has stood the test of time and experience.

20. **Value of Revaccination.**—This subject has been made one of careful study by Macgregor, and as a result of his work he draws the following conclusions: In adults not previously revaccinated the greater number are successful on revaccination, though this majority is not large. One previous revaccination, whether successful or not, renders the chances equal of a second revaccination succeeding or otherwise. In case of two previous revaccinations, successful or otherwise, success at a third revaccination is improbable. The period of life at which revaccination is more likely to succeed is before the age of 25 years. Those with good scars are much more likely to take on revaccination than those with poor scars.

Intercolonial Medical Journal of Australasia.

June.

23 Alcohol as a Beverage. J. W. Springthorpe, Melbourne.
24 Alcohol in Children's Diseases. A. J. Wood.
25 Effect of Alcohol on the Throat and Voice. C. L. M. Iredell.
26 Brachioplegia of Cerebellar Type and Rhythmical Tremor, with an Attempt to Explain the Symptoms and to Localize the Lesions. H. C. Maudsley.
27 Laryngeal Diphtheria in an Infant. R. Huckell.
28 Hematemesis in Typhoid Fever. S. W. Ferguson.
29 Intestinal Obstruction by a Band Eighteen Months After Appendicectomy. R. A. Stirling.

The Australasian Medical Gazette, Sydney.

June.

30 Hydrorrhæa Gravidarum. A. Austin.
31 Clinical Value of Accurate Estimation of Blood Pressure. S. Gillies.
32 *Foreign Body Retained in Orbit for Nearly Four Years. F. A. Pockley.
33 Causes of Cancer. J. B. Cleland, Sydney.
34 Leptothrix. W. J. Munro.
35 Exophthalmic Goiter. W. T. Chenhall.
36 Vasodilatation in Hemoptysis. E. T. Smith.

32. **Foreign Body in Orbit.**—Pockley reports rather a curious case. A boy, while playing at school, was knocked against a wooden fence and immediately afterward pulled a splinter of hard wood out of his right eye. As soon as he recovered from the concussion he discovered that he had no perception of light in that eye and that the ball was protruded somewhat. There was tenderness on pressure in the orbit below the eye, but not elsewhere. An incision was made through the conjunctiva, midway between the inferior oblique and inferior rectus, and a hard wood splinter three-quarters of an inch long was withdrawn. Careful probing revealed no other foreign body. The disc of that eye eventually passed into a condition of white atrophy, the eye being normal in position and range of movement. There was no pain or tenderness. Four years afterward, on awakening in the morning, the boy found sticking out of the corner of his eye a piece of wood one and on-equarter inches in length, and one-eighth inch in thickness. There had been no pain or swelling previously and nothing had been noticed when the boy went to bed the night before.

Semaine Médicale, Paris.

37 (XXVI, No. 29.) *Le fonctionnement du service de santé de l'armée japonaise pendant la guerre russo-japonaise de 1904-1905. Koiké (medical inspector general of Japanese armies).
38 (No. 30.) *Le pseudo-rétrécissement mitral fonctionnel (false mitral stenosis). L. Bard.
39 La désinfection est-elle une mesure efficace pour reduire la morbidité des maladies transmissibles.
40 (No. 31.) *L'origine rénale de l'hypertension artérielle permanente. L. Ambard.
41 New Degree of "Superior Medical Studies."—Réformes dans la mode de recrutement des agrégés des Facultés et des professeurs des Ecoles de médecine en France. See editorial, page 587.

37. **Sanitary Conditions in Japanese Army.**—This official communication from the medical inspector general of the Japanese armies describes the principles followed and the results obtained in the effort to keep the soldiers in good health. It concludes with the proud statement: "If it can be said that the Russo-Japanese war has no precedent in history in modern times in regard to its extent and its importance, it may be said with equal truth that our sanitary institutions won an equally unique victory." The mortality from disease was only a third of that from wounds. Beriberi was the cause of 25 per cent. of all the admissions from disease to the hospitals. The percentage of wounded was about 14.58 per cent. of the total active force. Smallpox, typhoid fever and dysentery reign in Manchuria nearly all the year, and as the soldiers were quartered by preference in the Chinese houses, the danger of infection was great. To attenuate this danger physicians were sent in advance of the troops and every available house and family were examined in order to recognize the contaminated and to exclude such houses from the occupancy of the troops, while the sick persons encountered were given careful treatment. A portable apparatus for steam sterilization of clothing and blankets was extensively used, and with excellent results. No injections of serum for typhoid fever dysentery, cholera or plague were made, as their effects are not always constant and with such an extensive battle line it would have been impossible always to wait for the febrile reaction. Each hospital ship had its own steam sterilizing plant, and each hospital train was carefully cleaned and disinfected each time after unloading.

38. **False Mitral Stenosis.**—Bard reviews the points useful for the differentiation of true from false mitral stenosis. The latter should be suggested by the occurrence of the signs in young chlorotic girls or nervous individuals. On the other hand, the presence of infantilism or tardy development should suggest the possibility of organic defect. An important differentiating point is what he calls the "vibration clôturale," that is, the changes in the audible vibration as the valve closes, the normal vibration being modified by the rigidity and induration of the valve in case of organic defect. This "clotural vibration" is plainer to the palpating hand than the modifications in the sounds to the ear. It is not affected materially by arrhythmia or tachycardia, which are liable to arrest the *thrill*. The exaggeration of mitral vibration from mere hyperfunction, without organic changes, is revealed by a wide, diffuse vibration without any localizable maximum, while it is scarcely attenuated by the interposed hands, and is exactly proportional to the extensive shaking of the wall over the heart. With organic changes there is more localized vibration; it has a deeper, more acute character, with little if any shaking of the wall. There can be no confusion between these two types except in case of pronounced palpitations and exaggerated *functioning masking the character of the vibration*. By waiting for a period of calm, the characteristics of the hard vibration may be detected. In false mitral stenosis the thrill is discerned, but the hard "clotural vibration" is absent, and this absence renders the significance of the thrill somewhat dubious. Differentiation is possible only by careful study of all the usual signs, but the special characteristics of the audible mitral vibration are of especial importance in this respect.

40. **Renal Origin of Permanent Arterial Hypertension.**—Ambard reviews the various types of arterial hypertension and the mechanism of its production. He is convinced that an exclusively mechanical hampering of the kidney secretion is the cause of the various types of exaggerated arterial tension encountered in the course of nephritis. When this mechanical hampering is variable, the arterial tension varies with it, and when it is invariable the hypertension is invariable. The variable effects of the retention of salt in the different types of nephritis are like an experimental demonstration of the part played by the kidney in the production of arterial hypertension. The fact that primary arterial hypertension seems to exist in certain cases is due to the presence of an unsuspected nephritis not accompanied by albuminuria, revealing its presence only by this mechanical interference with the kidney secreting function. It may be compensated by the increased arterial tension so perfectly that the existence of the nephritis is rendered dubious. Careful investigation of the permeability of the kidneys and autopsy of individuals of this category, dying accidentally, reveal the latent nephritis. In conclusion he remarks that the more one examines in detail these cases of permanent hypertension, the more convincing are the findings to the effect that there can be no permanent arterial hypertension without nephritis.

Berliner klinische Wochenschrift.

42 (XLIII, No. 22.) *Pyurie durch Leukocytose; Leukocytose-Pyämie. S. Talma (Utrecht).
43 *Precipitins of Cow's Milk in Infant's Blood.—Ueber den Nachweis der präcipitablen Substanz der Kuhmilch im Blute atrophischer Säuglinge. J. Bauer.
44 *Ist Hysterie eine Nervenkrankheit? P. Kronthal.
45 *Ueber Schleimhaut-Lupus der oberen Luftwege. M. Senator.
46 *Functional Treatment of Fractures.—Die funktionelle Behandlung der Knochenbrüche. C. Deutschländer. (Concluded.)
47 *Beiträge zur Chlorose und ihrer Behandlung. H. Bach. (Concluded.)
48 *Zur Therapie der harnsäuren Diathese (uric-acid diathesis). Grimm.
49 Physical Laws and Influence of Mineral Waters on Stomach Functions.—Können wir den Einfluss der Mineralwässer auf die Magenfunktion auf Grund physikalischer Gesetze erklären? B. Tausz.

42. **Pyuria Without Suppurative Processes.**—Talma describes 2 cases in which pus cells were found in the blood and urine

without a suppurative process being discovered anywhere in the body at autopsy. Large numbers of polynuclear leucocytes were found in the urine, and pus was discovered in small amounts in nearly all the organs, but without any local suppuration anywhere. The kidneys were perfectly sound in appearance. The pyuria was induced solely by leucocytosis in both cases reported, favored possibly by exaggerated permeability of the vessel walls. The patients were men 34 and 59 years old. The second patient had a small contracted kidney and chronic tuberculous lung lesions, but no suppurating process.

43. **Precipitins of Cow's Milk Found in Infant's Blood.**—Bauer was able to detect by the biologic hemolytic test the presence of cow milk precipitin in the blood of an infant suffering from severe atrophy. The toxic action of a foreign albumin has long been established, and this may have been the cause of the severe atrophy. The test was made with progressively smaller amounts of the human serum, plus 0.03 c.c. of the precipitating rabbit serum, plus 0.4 c.c. of fresh goat serum, the whole kept at 37 C. for an hour and a half. Then 1 c.c. of a 5 per cent. suspension of sensitized corpuscles from goat blood was added.

44. **Definition of Hysteria.**—Kronthal argues that hysteria can not be regarded as a nervous affection. It is the varying morbid reaction of the cells constituting the individual. Treatment should aim to influence the morbidly reacting cells by changing the environment and by strengthening the cells —the benefit from which has long been established empirically.

45. **Lupus of the Mucosa of Upper Air Passages.**—Senator has had occasion to observe 35 cases of lupus of the face in which the affection involved the mucosa of the upper air passages. In 22 the affection had commenced before the age of 25. Treatment of these comparatively inaccessible regions is by curetting into sound tissue, and examining the patient every three or four weeks to remove any foci overlooked or recurring. A 50 per cent. solution of lactic acid may be found useful when for any reason it is impossible to use the curette. Treatment with direct sunshine might be advisable for laryngeal lupus according to Sorgo's successful technic.

46. **Functional Treatment of Fractures.**—Deutschländer rejects immobilization and sparing the limb after a fracture as an irrational and harmful method of treatment. On the contrary, he preaches that the natural healing processes are promoted and hastened by functional use of, the limb from the start. Massage is a subordinate aid. The functional use of the limb, however, must be guided, as not all movements are beneficial. Those only must be allowed which correspond to the pathologic conditions and the mechanism of the parts. The novice in this method should commence with treatment of fractures of the finger phalanges. The functional technic is particularly effectual in case of fractures of joints. The results in 73 workingmen with fractures of the arms, treated by this functional technic, were that the fracture healed in 67 without impairing in the least the working capacity. The working capacity was impaired permanently about 50 per cent. in 2; about 40 per cent. in 2, and 10 per cent. in 2. Nearly 30 of these patients were over 40. He uses adjustable and removable immobilizing appliances, but always with a view to the functional use of the parts. The Bardenheuer extension treatment is a kind of functional therapy. He follows Hoffa's directions in regard to massage which must not be left to lay hands in case of fractures. The exercises of the limb must be slow and systematic and adapted to the individual conditions, usually with slight traction on the fractured limb. The movements may describe quite wide excursions, but they must not be abrupt nor excessive, and must never injure the new tissues forming in the process of repair. Both during the massage and the exercises the fragments must be fixed in the position in which healing is desired, with at the same time slight correcting pressure on them.

47. **Treatment of Chlorosis.**—Bach found gastric hypoacidity is only a small proportion of 224 cases of primary chlorosis. The acidity declined under treatment with iron. He gives the tabulated findings in 11 cases under iron treatment.

48. **Uric Acid Diathesis.**—Grimm ascribes the deposits of urates to the peculiarly low standard temperature of individuals exhibiting signs of the uric acid diathesis. Some of his patients have permanently a temperature in the axilla of 35.8 C. The low temperature of the blood prevents the proper dissolving of the uric acid in the blood, and urates are deposited at the points where the temperature is constantly lowest, that is in the ears, hands, feet and joints. This assumption suggests an explanation for the rarity of gout in tropical regions. The metabolism is sluggish, and on account of this sluggish metabolism the uric acid is precipitated at various points in the body. Treatment should aim to stimulate metabolism, and he has found the Sauerbrunn mineral waters remarkably effectual in such cases. He has tested the dissolving action of these waters a hundred times by placing a number of small kidney stones in urine from a uric acid patient. He weighed the stones before and after leaving them in the urine for a day or two. The patient then ingested a quart or three pints of the Sauerbrunn waters daily and the test with the kidney stones was repeated. They were found to lose constantly in weight in the urine voided under the influence of the mineral water. Five small stones in one instance, weighing 45 mg., weighed only 28 mg. after three days in the urine, rendered strongly alkaline by drinking the Sauerbrunn waters. One of the stones crumbled to pieces. In treating the acute attack, warmth only should be allowed. With the Sauerbrunn waters, hydrotherapy, exercise and superheated air, he claims that even the oldest cases of uric acid diathesis can be improved and in many instances cured.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

50 (XXXII, No. 27.) Prevention and Treatment of Alopecia of Various Etiology.—Verhütung und Bekämpfung der Kahlheit. O. Lassar. Clinical lecture.
51 *Zur Frage der Entstehung der Lungen-Tuberculose (original). A. Schlossmann and St. Engel.
52 Ueber Untersuchungen der Nasenrachenhöhle gesunder Menschen auf Meningococcen (In healthy throats). K. Kutscher.
53 Ueber die Flagellaten-Form des tropischen Malaria-Parasiten. F. C. Wellman.
54 Substitute for "Four Cell Bath."—Ueber einen wirklichen Ersatz des Vierzellenbades. Boruttau (Göttingen).
55 *Behandlung des Caput obstipum. H. Doering.
56 Negative Action of Antistreptococcus Serum.—Wirkung des Antistreptococcen-Serums. W. Zangemeister.
57 *Ueber Gonosan und Gonorrhoe-Therapie. C. Schindler and C. Siebert.
58 Kartoffel-Speisen für Diabetes und Adipositas (potatoes in diet). W. Sternberg.
59 Power for Physician's Automobile.—Motorstärke des Aerzte-Kraftwagen. Sänger.

51. **Origin of Pulmonary Tuberculosis.**—Schlossmann and Engel make out a strong case in support of the assumption that tubercle bacilli ingested are taken up into the system by the same route as particles of food. The mesenteric glands are used to the passage through them of corpuscular elements, droplets of fat, etc., and their behavior during digestion indicates that they differ functionally from the other lymph glands in the body. The bacilli entering the mesenteric glands are passed along to the thoracic duct, and from here they can readily infect the lungs and bronchi. Ingested bacilli are able to pass through the intact intestinal wall, through the glands and into the thoracic duct as readily and as rapidly as the food particles follow the same route. The authors found the tubercle bacilli in the lungs in young guinea-pigs a few hours after the bacilli had been administered in milk. Tuberculosis should be regarded as a "children's disease," in so far as its inception almost invariably occurs during childhood, although its manifestations frequently do not appear until later. Contracted pelvis causes no disturbances until the child-bearing age, and yet it is the result of a rachitic process in youth. The practical conclusions of the article are urgent appeals for the prevention and cure of tuberculosis in childhood. By strengthening the child's organism it becomes able to conquer the existing disease and develop an effectual immunity.

55. **Treatment of Wryneck.**—Doering describes the operative measures that have been successfully followed in 35 cases of congenital torticollis. Simple open tenotomy is the standard technic and the results are even better than with more complicated procedures. In 32 of the cases, including a number of severe ones, the cure was complete and permanent.

57. **Gonosan and Treatment of Gonorrhea.**—Schindler and Siebert comment on the extensively advertised drugs for internal treatment of gonorrhea, referring especially to gonosan. They assert that such drugs are dangerous, as they have a tendency to supplant the essential and indispensable local treatment. If it were not for this, they remark, "the manufacturing chemists and the charlatans—whose ranks include many apothecaries, unfortunately—might be left in peace to profit by the sale of this convenient and consequently popular method of treating gonorrhea." "But," they add, "internal treatment of gonorrhea is not effectual. Extensive tests and experiments at Neisser's clinic have demonstrated the absolute worthlessness of any treatment not strictly antibacterial, especially internal treatment. Gonosan has been subjected lately to special tests which have established that its internal administration does not affect the gonococci in any way and hence has no influence on the course of the disease." After taking 10 capsules of gonosan a day for three days they mixed 1 c.c. of the urine on the third day with a suspension of gonococci. Even under these extremely favorable conditions the gonosan urine did not have the slightest inhibiting effect on the growth of the gonococci in the test tube. Local tests of the gonosan showed that it was far less bactericidal than the silver salts, oxycyanid of mercury or ichthyol. They query therefore, why, if gonosan has no favorable influence whatever on gonorrhea, either internally or externally, that is, does not kill the gonococci or inhibit their growth, why has it happened that, notwithstanding this, gonosan has met with such a cordial reception on the part of many physicians? They ascribe this, first, to the fact that it is much more convenient to prescribe capsules internally than to apply effectual local treatment, and secondly, to the fact that many physicians still cling to the delusion that if the symptoms, the pain, smarting and discharge can be banished in the early stages, the disease is cured. And yet countless experiences have shown that the gonococci still lurk in the parts. It is the practice at Neisser's clinic to refrain from arresting the discharge at once, as otherwise the patient thinks he is cured and grows careless. Neisser prefers freshly prepared solutions of a silver salt for the local treatment, commenced at the earliest possible moment. If this does not always accomplish the desired result the trouble is generally in the inadequate technic on the part of the patients, and, unfortunately, on the part of some physicians. Everything claimed for the action of gonosan is uncertain and inconstant, while good results are invariably obtained by an early, energetic course of local treatment.

Münchener medizinische Wochenschrift.

60 (LIII, No. 23.) Ueber Cholera- und Typhus-Endotoxine. M Hahn.
61 *Study of Bier's Congestive Hyperemia from Standpoint of Endotoxin Theory.—Die Biersche Stauungshyperämie vom Standpunkt der Endotoxinlehre. A. Wolff-Eisner (Senator's clinic, Berlin).
62 Verfahren zur Verminderung der Infectionsmöglichkeit bei Operationen in der Bauchhöhle (to reduce possibility of infection in abdominal surgery). A. Theilhaber.
63 *Measurement of Blood Pressure.—Ueber Blutdruckmessungen. T. Schilling.
64 *Zur Behandlung der Prostata-Hypertrophie. Rörig II.
65 *Pregnancy and Laryngeal Tuberculosis.—Schwangerschaft und Kehlkopftub. Levinger.
66 *Case of Permanent Spinal Paralysis After Spinal Anesthesia. —Bleibende Rückenmarkslähmung nach Lumbalanästhesie. Fritz König (Altona).
67 Two Cases of Left Abducent Paralysis After Spinal Anesthesia.—Zwei Fälle von linksseitiger Abduzenslähmung nach Rückenmarksanästhesie. P. Roeder (Israel's clinic, Berlin).
68 *Zur Kasuistik der Polycythämie, zugleich ein Beitrag zur Aetiologie der Migraine ophthalmique. G. Köster. (Concluded.)

61. **Congestive Hyperemia from Standpoint of Endotoxin Theory.**—The results of experimental research harmonize with the clinical phenomena observed and emphasize the fact that the proper indications for the application of Bier's congestive hyperemia are the same as for the bactericidal serums. Wolff-Eisner reviews them in detail. The congestive hyperemia has the advantage over the serums that the evacuation of the endotoxins can be easily secured by incision. This evacuation is indispensable, and it is a mistake to suppose that the congestive hyperemia takes the place of surgical measures except in the very mildest cases. Lexer has shown that the congestive hyperemia causes destruction of some of the bacteria and consequent liberation of endotoxins, but the bacteriolysis is not complete, and some bacilli are proliferating while others are being destroyed. Unless an ample outlet is maintained for the escape of the endotoxins, the measure does more harm than good. But if free escape is provided, then the conditions are remarkably favorable for rapid healing. Wolff-Eisner remarks in addition to the above, that bacteriology and immunization and their problems should not be left exclusively to the theorizers, but should be taken into the clinic. They will there yield valuable fruits and the clinic in turn will render them of greater use. Modern clinical institutes should be equipped for such work with medical men trained in it and able to interpret the phenomena observed. This would prevent the blind and wasteful use of expensive serums on patients without the proper indications. The endotoxin theory is destined, he thinks, to play a most important part not only in the study of the origin of the disease, but also in its prevention and cure.

63. **Measurement of the Blood Pressure.**—Schilling expatiates on the great difference in the results observed when the constricting band is wide. He advises the use of a band 12 cm. wide, which gives much more accurate findings. The normal range is found to be less extensive than when a narrow band is used. With the Riva-Rocci and the 12 cm. band the blood pressure of the healthy adult ranged only from 110 to 125 mm. The average in 100 men was 118.1 mm. In 1,000 tests on 350 persons he found that instrumental measurement alone is reliable. Notwithstanding his wide experience, in estimating the blood pressure without the instrument, he frequently found that his impressions were far from the truth when the results were compared with those registered by the instrument. In many cases the blood pressure findings were the only clue to effectual treatment. He has sometimes derived great benefit from digitalis in cases with high pressure, the general health improving as the blood pressure dropped. As a rule, however, it is only a symptom and does not need to be treated separately. Krehl has recently pointed out that it may be merely a means of defense on the part of the organism in some cases.

64. **Treatment of Hypertrophy of the Prostate.**—Rörig has performed the Bottini operation in 203 cases, and has had only one mishap and one death in this series. The one patient who died succumbed to the results of uremic intoxication a few weeks after the operation. Rörig is an earnest advocate of the Bottini operation, believing that it should be the standard and that resection or excision of the prostate should be reserved for exceptional cases. His results are a complete cure in 47 out of 51 cases of chronic, absolute retention, that is, in 92 per cent., with 1 patient improved. In 132 cases of chronic, relative retention of urine, acute, intermittent retention, tenesmus and difficulty in catheterizing, 83 patients, 62 per cent., were completely cured, while 34 per cent. were much improved, and no result was obtained in 3, that is, in 2.27 per cent. In 20 cases of slight hypertrophy, 9 patients were improved and no effect could be discovered in the 11 others. He has never had recurrence in any of his cases. He always operates with the patient standing erect. He inflates the cleansed bladder with air, introduces the apparatus, hooks it in and allows the air to escape. When the patient states that he feels a desire to urinate, the knife is sprung back into its sheath, under 50 amperes, and air is injected again, after which the operation is continued. He then instills 10 c.c. of a 1 per cent. silver nitrate solution and has the patient lie down. In case of much congestion he leaves a catheter in the bladder. The prostate presents in such a way with the patient standing that a single cut is sometimes sufficient. He never operates under general anesthesia, as the bladder walls are liable to relax and the prostate to alter its shape. He ascribes to the chloroform anesthesia most of his failures, as in these he happened to operate under general anesthesia. A second operation later without chloroform soon rendered the cure complete.

65. **Evil Effect of Pregnancy on Laryngeal Tuberculosis.**—Levinger's opinion as to the injury from a pregnancy in case of laryngeal tuberculosis has been amply confirmed by his experience in 3 cases. In the first the woman died from the rapid progress of the laryngeal affection about two weeks after she had been delivered of an apparently healthy child. With the exception of hoarseness for two years (no laryngologic examination), there had been no indications of a throat trouble until after delivery, when an attack of suffocation and fever led to the discovery of the tuberculous tumor in the throat and lesions in the lungs. The patient did not survive excision more than a week or so, succumbing to hemoptysis. In a second case Levinger delivered the patient at the end of the fifth month on account of aggravation of a throat and pulmonary tuberculous affection as the pregnancy progressed. The patient bore the operation well, as also excision of the tuberculous tumor in the throat, and has since been in comparatively good health. In a third patient the deleterious influence of the pregnancy was likewise unmistakable.

66. **Permanent Paralysis After Spinal Anesthesia.**—König's patient was a man of 35, who fell, while drunk, and fractured the patella. A week later the patella was sutured under stovain spinal anesthesia, about 0.06 gm. stovain being mixed with the patient's own cerebrospinal fluid, which was then reinjected between the third and fourth lumbar vertebræ. In less than fifteen minutes there was complete anesthesia to the umbilicus, but none of the functions of the parts below the umbilicus returned; bladder, rectum and legs were entirely paralyzed, the motor and sensory functions, and the tendon and cutaneous reflexes were alike abolished. The entire region below the seventh dorsal vertebra was as dead as after a total lesion of the spinal cord, and after the usual sequence of cystitis and decubitus, death occurred in a little more than three months. Headache, nausea and fever had also been observed. The paralysis was complete from the very first, which speaks against an infectious origin. Autopsy showed the spinal cord adherent to the dura below the ninth vertebra, with signs of softening in the lumbar region and to a less extent in the thoracic, with a purulent fluid escaping on transverse section.

68. **Polycythemia.**—Köster remarks that nearly all the cases of polycythemia known were in middle-aged persons, the youngest was 20 and the oldest 60. He reviews the various cases that have been published and one from his own experience. The etiology seems to be still as obscure as ever, although it is apparent that the cause can not be a single one. The only point firmly established to date is the change in the blood-forming organs, but whether this is primary or secondary is still a mystery. See editorial in The Journal, Aug. 18, 1906, p. 510.

Hospitalstidende, Copenhagen.

Last indexed, page 158.

69 (XLIX, No. 12.) *Om Fractura olecrani. A. Lendorf.
70 (No. 13.) *Paralyse under Forløbet af kroupøs Pneumoni. F. Vogelius.
71 Et Tilfælde af medfødt Kæmpevækst (congenital giant growth). E. Böcher.
72 (No. 14.) *Catgut That Can Be Boiled.—Om Kogecatgut. C. F. Heerfordt.
73 (Nos. 15-16.) Et Tilfælde af Tabes dorsalis og Aortaaneurysme, med Stenose af Trachea, Hæmo-Pneumothorax, Hjertetilfælde og universal Hydrops, etc. Helbredelse Højfebril Hæmothorax). Nordentoft. Recovery.
74 Et Tilfælde af Luxatio traumatica nervi ulnaris. A. Holm.
75 (No. 17.) Tilfælde af rhinogen Pyæmi. S. Bentzen.
76 (No. 18.) *Et Tilfælde af Salpingitis tuberculosa diagnosticeret ved Tuberkulin-Injektion. S. Kemp.
77 *Huntington's Korea. Wimmer.
78 (Nos. 19-20.) *Gastric Ulcer.—Bidrag til Mavesaarets Patologi og Terapi. Det Reichmann'ske Symptom. V. Rubow.
79 Anwendelse af dræbt Kultur til Widal-Reaktion. G. Dreyer. Killed cultures.

69. **Fracture of the Olecranon.**—The proportion of fractures of the elbow was 103 to 8,650 fractures of all kinds in von Bruns' experience up to 1903. Lendorf has encountered 21 cases in a total of 3,756 fractures. He describes and illustrates the various types, and says that treatment depends on whether the accessory extension apparatus is injured or not. If it is, operative measures are indispensable, and they are not indicated unless this is the case. The state of the accessory stretching apparatus is the key to treatment, and it must be determined as early as possible. When the point of the olecranon is involved in the fracture, and the anamnesis suggests that there was great strain on the muscles, the rupture is generally transverse and extensive. With the usual direct fracture, the diastasis is very large, while it is small if the tendons still hold. The more the upper fragments are fastened in a flexed position, so that they can not slip around from side to side, the greater the probability that the rupture is small. As soon as the local pain has somewhat subsided, sometimes the same day, but usually not for a few days after the accident, the condition of the stretching apparatus can be tested by having the patient extend his arm. This can be done without fear of rupture as the tendon fibers are too strong to tear with this exercise. The arm should be held so that the movements can be done in the horizontal plane. When the arm is extended it can also be ascertained whether or not the patient is able to hold it in the position which allows a weight on the forearm to cause it to bend. This same test is extremely useful in examining a fractured patella. One of his patients with the stumps fully 1 cm. apart was able—a few hours after the accident—to raise his leg while extended. This showed that the accessory stretching apparatus was almost intact—an important guide to treatment and prognosis. This exercise must be done very cautiously, and if it is excessively painful it is best to postpone it, although the results of treatment are better, the earlier it is undertaken. It is not enough to suture the bone, the ruptured tendons must also be sutured. The arm must be immobilized in a flexed position. If operative measures are not required, massage and movements are indispensable. Tilanus massages in all cases, beginning at once after the accident with daily séances, applying a flannel bandage to promote reabsorption of the extravasated blood in and around the joint, and fastening the arm in a splint holding it in extension. Passive bending and stretching of the arm follow and the bandages are discarded after three weeks, when the patient is allowed to use his arm. It is important not to allow active movements before this date. Flexion is more dangerous in all cases as the patient exposes the tendons to injury when he feels pain and strains the triceps. The arm must be held stretched during these first séances.

70. **Paralysis During Croupous Pneumonia.**—In Vogelius' 2 cases hemiplegia with aphasia developed three days after the crisis of croupous pneumonia in one case, and two days after the onset in the other. Both patients were young men and the paralysis proved permanent. One patient died a few months later of purulent meningitis and pericarditis. The few cases of pneumonic paralysis on record are reviewed and compared. Vogelius' patients were free from syphilis, alcoholism and arteriosclerosis, and had shown no cardiac symptoms. The meningitis was probably a pneumococcus metastasis. The patches of necrosis found in the brain in the case that came to autopsy explain the hemiplegia observed. The same can be said of the muscular atrophy and other changes in the legs in the other patients. Death is the rule in older persons; in the young the paralysis may persist for a long time, but in all the cases previously published complete recovery followed at last. The 2 cases now reported are peculiar on this account as one terminated fatally and there has been little improvement in the paralysis in the other to date. In the 5 fatal cases on record of tardy paralysis after pneumonia, meningomyelitis was found in 2, while there were no signs of it in the others. The trouble is probably the result of the direct action of the pneumococcus toxin on the nervous system, similar to the paralysis after diphtheria.

72. **Catgut That Can Be Boiled.**—Heerfordt has been trying for years to produce a catgut than can be boiled, like the instruments, just before using. He announced in 1904 that preliminary treatment with formaldehyd rendered the catgut able to resist the action of boiling water. At the same time, however, he stated that there was no certainty as to the sterilization of catgut thus treated, as it lost too much in strength if the process was pushed far enough to ensure sterility. He now

announces that this difficulty can be overcome by using catgut previously sterilized with dry heat or with Claudius' technic of leaving the raw catgut for 8 days in a solution of equal parts iodin and potassium iodid in 100 parts water, or if the catgut is sterilized by leaving for fourteen days in a 2 per cent. solution of carbolic acid, twice changed. The catgut thus sterilized is loosely wound on a frame and left for 24 hours in an aqueous 4 per cent. solution of formaldehyd. The frame with the catgut is then rinsed for a few moments in running water, and then placed for a few hours in a 2 per cent. aqueous solution of ammonia. The catgut is then wound into coils, rinsed in running water for about 24 hours, then placed in the ammonia solution for 8 hours, and rinsed in running water for about 12 hours. It is then carefully dried and wound in coils or on spools, ready to use. It resembles raw catgut in appearance at this stage. Just before using, it is placed in boiling water for from 10 to 20 minutes. The "koge-catgut" (catgut that can be boiled), prepared in this way, has only a very slight irritating action on the tissues, and sometimes none at all. In 12 tests the catgut was introduced into the cornea or into the anterior chamber of rabbits' eyes, and the symptoms of irritation were minimal. In 10 cases there was an insignificant pericorneal congestion, and in the others no symptoms developed indicating any irritation. The catgut was completely absorbed by the end of 2 weeks in every instance. One precaution must always be observed, namely, that the catgut must be taut when it is placed in the boiling water. He has devised a special suture holder for the purpose, which stretches the catgut and prevents its snarling, neither the needle nor the catgut coming in contact with the fingers. When the catgut is lifted out of the boiling water and left exposed to the air for a few moments, the partially dry surface offers an especially favorable consistency for suturing. Catgut thus prepared is in constant use in the ophthalmic clinic at Copenhagen and in Rovsing's hospital and private practice. It is regarded as an important progress both for the hospital surgeon and the general practitioner. Even the finest catgut (00 and 000) can be threaded dry in a very fine needle, and after both needle and catgut have been boiled, can be used in suturing nerves or blood vessels or in operations on the eyes. Before placing the catgut in the formaldehyd solution mentioned above, if it was sterilized with carbolic acid or with the iodo-iodid solution, these chemicals must be thoroughly removed by soaking the catgut in a 2 per cent. aqueous solution of ammonia for 2 hours and then rinsing thoroughly in running water. Catgut sterilized with dry heat is prepared by soaking for an hour in boiled water. After these preliminaries the sterilized catgut is ready for the formaldehyd mentioned above. Heerfordt would like to have sterile catgut prepared for surgical purposes under state guarantee. He thinks that the importance of the subject and the enormous demand justify something of the kind. It is rarely possible for tests of the sterilization of catgut to be absolutely decisive under present conditions. The real touchstone, that is, the most resistant germs—are seldom procurable.

76. **Tuberculosis of Adnexa Diagnosed with Tuberculin.**—Kemp's patient was a housemaid of 24, scrofulous as a child, but otherwise healthy until abdominal and slight pulmonary symptoms developed, varying in intensity during 3 years, with suppression of the menses for one year, with their reappearance later. Pains in the iliac region, especially on the left side, were frequent, and the girl became much emaciated. The tuberculin test was positive and tuberculous lesions were found in the tubes and one ovary, which were removed, leaving the other ovary. The patient rapidly recovered and no further symptoms have been observed, either from the lungs or abdomen. The case was rendered specially interesting by the lack of any local reaction in the lungs after the injection of tuberculin. This indicated that the lung process had healed, and encouraged operative treatment of the gynecologic tuberculous process. With the exception of the tuberculin reaction, none of the symptoms were pathognomonic of a tuberculous affection. He remarks that the tuberculin test has been applied in gynecology only ten times to date, according to the literature. Bossi, Meyer and Birnbaum used it in 10 cases, with a positive response in 6. Absolutely negative findings indicate the non-tuberculous character of the lesions, or, at least, that they do not require active operative intervention. A positive response without any local reaction also speaks against a gynecologic tuberculous affection.

77. **Huntington's Chorea.**—Wimmer's patient was a 1-para of 47 whose father, twin sister and 2 brothers presented the same syndrome. She had never had acute febrile rheumatism and also denied syphilis. Another patient was a physician 51 years old, who had suffered several times from recurring acute articular rheumatism during the last 10 or 12 years. His father had succumbed to paralytic dementia. Hallucinations in sight and hearing developed three years before the choreic movements were noticed, with obsessions of persecution and depression, and a rapid decline. The pathologic anatomy in this case is described in detail.

78. **Gastric Ulcer.**—Rubow reports 12 cases in all of which hypersecretion of gastric juice coincided with an ulcer. In 3 cases the diagnosis of ulcer was confirmed by an operation, in 4 others by the prompt success of treatment directed against the assumed ulcer, and in the others the history of the case rendered certain an ulcer with stenosis and cancerous degeneration. All these cases confirmed the intimate connection between an ulcer and the gastrosuccorrhea. The latter can be accepted, therefore, as an almost certain sign of ulcer. The finding of 50 c.c. of fluid or more in the fasting stomach in the morning, especially if very acid, is presumptive evidence of an ulcer. It decided the question in several dubious cases in his experience, especially in some in which obstinate constipation or other intestinal affection might have been responsible for the gastric symptoms. An ulcer in cancerous degeneration is liable likely to be accompanied by gastrosuccorrhea if the mucosa is still functionally capable. Madsen has reported 2 cases of cancer of the stomach accompanied by hypersecretion of gastric juice. How frequently it accompanies ulcer is not known, but it is more likely to be observed with the more chronic ulcers rather than in the new-forming ones. Its differential importance may be great, especially in cases in which the diagnosis wavers between ulcer, chronic intestinal trouble and a gallstone affection. In examining for gastrosuccorrhea it must be established that the patient did not drink during the night, and also that the tip of the sound is actually in the lowest part of the stomach, which in case of gastroptosis may be very low.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

OBSTETRICS. Edited by J. B. De Lee, A.M., M.D., Professor of Obstetrics Northwestern University Medical School, with the Collaboration of D. Roehler, M.D., and H. M. Stowe, M.D. Vol. 5 of the Practical Medicine Series, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery, Under the General Editorial Charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Series 1906. Cloth. Pp. 256. Chicago: The Year Book Publishers, 1906.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, etc. By Leading Members of the Medical Profession Throughout the World. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia, with the Collaboration of W. Osler, M.D., J. H. Musser, M.D., and others. Vol. II. Sixteenth Series, 1906. Cloth. Pp. 302. Price, $2.00 net. Philadelphia: J. B. Lippincott Company, 1906.

TEXT-BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By J. J. Reese, M.D., Late Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania. Seventh edition, Revised by H. Leffmann, A.M., M.D., Professor of Chemistry and Toxicology in the Woman's Medical College of Pennsylvania. Cloth. Pp. 656. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

ELEMENTS OF GENERAL CHEMISTRY, with Experiments, by J. H. Long, M.S., Sc.D., Professor of Chemistry and Director of the Chemical Laboratories in the Northwestern University Medical School. Fourth edition. Revised and Enlarged. Cloth. Pp. 443. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co., 1906.

PHILADELPHIA HOSPITAL REPORTS. Edited by H. B. Allyn, M.D., Vol. VI. 1905. Cloth. Pp. 276. Philadelphia: Bradley Printing Co. 1905.

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees.

Vol. XLVII. CHICAGO, ILLINOIS, SEPTEMBER 8, 1906. No. 10.

Address

THE OPPORTUNITY OF THE PEDIATRICIAN.*

THOMAS MORGAN ROTCH, M.D.
Professor of Pediatrics, Harvard University.
CAMBRIDGE, MASS.

THEN AND NOW.

In the year 1880, in the city of Richmond, in a small room containing a mere handful of physicians, I had the honor, as secretary of this Section on Diseases of Children, to sit face to face with the first members who inaugurated a great advance in medical investigation.

Your leader then who, although over a quarter of a century has passed by, still represents preëminently the broad principles of pediatric science, was chairman of this Section and established it on a firm basis. We were thus honored in the very beginning of our existence by having as our presiding officer the father of pediatrics in America—Abraham Jacobi. The name has proved of good omen, and the meeting of 1880 was an epoch in the history of the American Medical Association.

To-day I have been bidden, and have accepted the privilege with pleasure, to welcome in Boston the fully-developed Section on Diseases of Children of the present day; a Section which is no longer a handful of pioneers, of explorers in an almost unknown field, but which is large in numbers, assured by success, representing all parts of our great country; a Section no longer striving even for recognition, but constituting one of the strong, vital principles of the whole Association, and working on a ground which has been well broken and which has brought forth a harvest of original American ideas.

I welcome you to this eastern city which is so distant from your homes that we can but deem it a compliment that you have journeyed so far. I congratulate you on the progress which, through your efforts, has been made in your chosen branch of medical science, a branch as important as it is intensely interesting.

IMPORTANCE OF PEDIATRICS.

What more important, what more worthy work for the adult brain can there be than by the study of the early periods of life to aid in securing better conditions, physical and mental, in the infant, the child and the adult, and thus to strive to make the people of the future in our great republic worthy of, and fitted to deal with, the responsibilities which such a republic brings with it?

In your hands and brains rests the duty and power to make or to mar the citizens of the future, and to see that in this respect one decade is superior to the previous one.

What this Section was needed for, what it was formed for, what it was from the first intended to do, was to place the study of pediatrics on the same elevated plane that had been established for adult life. To accomplish this it had in the early years of its existence to be iconoclastic. This iconoclasm and patient originality have been the weapons with which those who have devoted their thought to the study of early life have fought their way to the front, and placed the standard of pediatrics where it ought to be—side by side with the more perfected anatomic and physiologic investigations of adult life, which have become the true basis for the enlightened clinical study of human beings.

In order to understand the fully developed man in health and disease, it is self-evident that the anatomy and physiology, not only of the final stage of growth, but also of the various stages of development, from embryo to infant, infant to child and child to adult should be successively dealt with. Looking at the study of pediatrics from this point of view, it is to be noted that the subject is not a specialty, as is that of the eye or ear, but that it is a subject which requires special study, that there is a clinical medicine of infancy and childhood as there is of adult life and old age. One is almost distinct from the other; all are equally important, although it has been held by certain advanced thinkers that the clinical medicine of early life is most important, as it leads up to and influences so greatly that of a later period. In this sense, the study of disease in early life merely represents a large and important division of clinical medicine in general. That the study of the clinical medicine of early life should be taught separately and that it should be promoted by special societies, special journals, special books, special medical departments and special hospitals, is without question, for, as surely as the subject is left to general societies, general hospitals, general literature and general medicine, so will it be neglected and allowed to retrograde. This has been proved over and over again.

With few exceptions, there are no special diseases of children; on the contrary, it is the study of the manifestations of the different diseases as they appear in children which is so important and which shows how different are these manifestations from those of the same diseases as they appear in adults.

WORK OF THE SECTION.

As I look on the members of this Section, representing all parts of the United States, it is impressed on me that it is in your power to develop advanced and general truths; that you should deal in your sectional work with the living questions of the day, and that the results of your deliberations should be authoritatively promulgated by each individual far and wide throughout the whole country. Thus only can the unenlightened influence of the general profession or the laity be curbed in the harm which it is continually doing to the scientific work connected with the early periods of life. Thus only can the self-sufficient ignorance regarding the most critical phase of human existence be properly combated, and the general physician be forced to understand that he has but a limited knowledge of what he has been in the habit of considering simple questions, and on which he has been accustomed to give off-hand opinions and advice to the credulous mother of the suffering child.

---

* Address of welcome given at the opening session of the Section on Diseases of Children of the American Medical Association in Boston, June 5, 1906.

Beyond the important questions of prophylaxis and hygiene, which play such a great rôle in the normal development of young human beings, it is no exaggeration to state that a large number of infants and young children throughout the land are suffering as much from the vigorous and ill-judged treatment of their zealous medical attendants as from the disease with which they started. This should be stopped. This it is the mission of the Section on Diseases of Children to terminate.

NEED OF CORRECT THERAPEUTICS.

The therapeutics of infancy and childhood, as understood by thousands of practitioners in Germany and France, in England and in America, is often a wonderful exhibition of the vagaries in which the human mind, sound on other subjects, can be induced to indulge. There is a total disregard of natural processes, an over-exaggeration of symptoms which in the adult mean danger and require active treatment, while in the child they may be but simple and harmless manifestations of an over excited nervous system. Such is the *ignis fatuus,* so misleading not only to those who have not especially studied the early years of life, but also to those who have seen much of it, but with eyes blinded by traditions of the past.

In this age of rapid progress, of quick change and interchange of ideas, the precision of investigators in all branches of research has almost placed medicine on a level with the exact sciences. It would seem that we, who are endeavoring to place our especial branch on firmer ground, should consider with unusual care the opinions which we express to the profession at large, and to the laity, and that our writings should be founded on principles as accurate as the science of our day can make them.

NEED OF RELIABLE LITERATURE.

This has been but little done, and, consequently, in the last fifty years we have amassed volumes of most unreliable pediatric literature. This is one of the vital living questions of the day, which we should appreciate and grapple with.

The literature of a society gives evidence of the work which has been done by its members long after their individual labors have ceased and their places have been filled by a younger generation. If that literature has been well considered and shows evidence of representing not the hasty judgment of the day, but of being built on the broad foundation of exact science, it will be worthy of the study of our descendants and aid them in their work. As a sound unquestioned nucleus it will give them encouragement to broaden the field of their inquiry and to add new knowledge year by year.

It should be the aim of this Section that a lasting literature of this kind, ever young and fresh in the truths which it enunciates, ever presenting a solid center from which may radiate more extended investigation, shall emanate from its members. Let the papers presented to this Section so teem with unquestioned truths, with pages recording facts and finding small place for theories, that on their face they will prove the truth and not the fallacy of the ancient lines, which, in the present age of unbridled literature, might well be questioned—lines which read:

Give books! They live when you are dead,
Light on the darkened mind they shed,
Good seed they sow, from age to age,
Through all this mortal pilgrimage.
They nurse the germ of holy trust,
They wake, untired, when you are dust.

Gentlemen of the Section on Diseases of Children, I again give you sincere welcome and wish you all success in your deliberations.

Original Articles

POSTCRITICAL FEVER AND OTHER SEQUELÆ OF CROUPOUS PNEUMONIA.*

JAMES E. TALLEY, M.D.
PHILADELPHIA.

A study of the last 325 cases at the Presbyterian Hospital, Philadelphia, forms the basis for this article. Almost naturally one thinks of suppuration somewhere as the commonest cause of the persistence of fever after the crisis in pneumonia, though apparently endocardial and pericardial inflammation is a close second.

Among the suppurative cases we found five of empyema, one being interlobar, one encysted and one genuine case of lung abscess which was large enough to be diagnosed antemortem.

EMPYEMA.

An empyema with typical development as illustrated by the following cases makes the diagnosis easy:

Case 1.—A white woman, aged 47, with typical signs and symptoms of pneumonia involving the lower two-thirds of the left lung, had apparently a crisis (there being a simultaneous fall in temperature, pulse and respiration) on the seventh day, but the temperature immediately went up again, fluctuating between normal and 102 F. The recurrence of the fever, coupled with the fact that though the bronchial breathing and râles in the left chest began to disappear, the percussion note became flat and there was a progressive loss of fremitus, pointed to the presence of fluid there. This, in connection with the fact that the leucocytes which were 17,800 two days before the crisis, increased to 31,600 two days after the crisis, made empyema almost sure. The needle showed pus, and the operation evacuated about two quarts.

Case 2.—This was less characteristic than the preceding case. The patient was a corpulent woman, aged 48, who had had pneumonia at fourteen and several attacks of pleurisy during her life. On admission to the hospital she showed the signs and symptoms of consolidation of the left lung with a friction rub at the base and the squeaking râles of bronchitis on the right. There was no attempt at a crisis, the temperature ranging from 100 to 104 F. throughout the course of the disease with very small diurnal remissions. In addition to the signs in the left chest, the patient developed a somewhat enlarged and tender gall bladder and diarrhea; the Widal reaction was positive, *which made one suspect that the patient was* developing typhoid, as it was prevalent at the time, though a leucocytosis of 36,400 rather negatived the idea. Death ensued on the twentieth day from the chill, and the postmortem showed that the left lung was in a state of gray hepatization, and that the left pleura contained semisolid pus which would not pass through any needle ordinarily used for exploratory tests.

Case 3.—This case of interlobar empyema was in a colored girl aged 13 who had a typical croupous pneumonia involving the whole apex and the posterior aspect of the right lung below. The crisis occurred on the twelfth day with a simultaneous fall of temperature, pulse and respiration. However, though the respirations fell from an average of sixty to the twenties, the pulse rate and temperature did not reach normal. The latter ranged from 100 to 101 and 102 F., which was supposed to be due to a purulent otitis that had developed about the tenth day; but though the otitis improved, the temperature still persisted and made one look for other causes. Three examinations of the sputum on the twelfth, fifteenth and nineteenth days showed pneumococci and streptococci, but no tubercle bacilli. The leucocytosis kept in general about the same level. It was 28,800 soon after admission, 45,200 at the time the otitis was developing, and nine counts from this time until pus was actually demonstrated, showed 32,066. The persistence of leucocytosis, the hectic-like temperature, the continued indicanuria, and the whole aspect of the patient made pus somewhere probable, though the classic sweats and chills were wanting. It was only after aspirating three times that pus was located. The case is reported in full by Dr. Jopson and myself[1] with the reasons for considering it an interlobar empyema, therein set forth.

---

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Case 4.—This case of encysted empyema occurred in a negro teamster of twenty-eight who had his crisis, with profuse sweats, five days from the initial chill, but the temperature soon rose again and remained elevated until death ten days later. He showed on admission signs of consolidation on the left side from the apex to the fifth rib, and posteriorally, over the whole left lung. Also there were some signs of consolidation at the right base. Within a few days the absolute dullness, distinct breath sounds and absence of vocal friction aroused the suspicion that there was liquid in the left upper chest, which suspicion was confirmed by aspiration. The operation evacuated 32 ounces of pus, which immediately accumulated again as shown by postmortem. Also there developed pleural friction and marked consolidation of the right side, and pericardial friction before death.

Autopsy.—The autopsy showed that the left pleura contained one and a half quarts of fluid pus which was encysted in the space from the apex to the seventh rib. The right pleura showed some signs of friable adhesions. The left lower lobe was entirely collapsed and showed one small abscess cavity and several very small abscesses. The right showed a consolidated lower lobe. The pericardium was in a condition of fibrinous lace work, and in a large branch of the pulmonary artery, a long, well organized clot, firmly adherent to the walls and evidently septic in origin, was found.

Case 5.—The fifth case of empyema was in a boy of six, and furnishes an example of the wide-spread changes that may occur in the short space of eleven days counting from the initial chill to death. The attack began with vomiting, chill, fever, and in rapid sequence, delirium, herpes, rigidity of the neck and consolidation of the left base, followed. The temperature remained about 102 F. until three days preceding death, when it fell by lysis to normal and arose again to 104 F. just previous to dissolution. The left lower lobe, and the lower portion of the upper lobe, showed throughout signs of consolidation with a rapid development of absolute flatness and mufiling of respiratory sounds and râles during the last two days of life. The right lung gradually developed signs of consolidation, but never so markedly as the left. Two days before death there developed over the right side, a tympanitic note with a distinct metallic tinkle heard both during inspiration and expiration. The coin test was very marked also, thus pointing to the presence of pneumothorax, probably due to the rupture of one of the small abscesses found postmortem.

Autopsy.—Both the right and left chest showed purulent pleuritis. The pleural cavities were full of yellow pus and many soft adhesions were present. The left lung showed complete consolidation of its lower lobe and a part of the upper. The upper lobe of the right lung contained three abscesses about the size of hazel nuts. The middle lobe contained multiple small abscesses, and a few were also found in the upper portion of the lower lobe.

Though not pertinent to the immediate subject, the markedly contracted colon, and a thin-walled diverticulum on the lower aspect of the greater curvature of the stomach, were interesting.

ABSCESS.

Case 6.—The typical abscess was in a white woman, aged 27, who was admitted to the hospital too ill to give any history except that she had had pneumonia. She was coughing up almost continually large amounts of foul smelling purulent material. Three examinations of the sputum at intervals of several days, showed uniformly that streptococci were abundant, elastic tissue present in small amount, and tubercle bacilli, hematoidin and cholesterin crystals were always absent. The temperature ranged from 100 to 102.3 F., presenting a moderate evening rise and morning fall until the fourth day before death, when it went down by the same remission, to sub-normal.

Examination.—Repeated examinations of the chest showed that the right side appeared larger than the left and expanded more on deep inspiration. From the apex to the third interspace on the right side there were all the signs of consolidation. In this area also were found the cracked-pot sound and amorphic breathing, more marked posteriorally. There were also bubbling râles. Below the spine of the scapula the note was hyper-resonant. The left side was less expansile than the right. Tactile fremitus, percussion resonance, and bronchial breathing all were impaired, but less so than on the right. Especially, below the spine of the scapula were the breath sounds less broncial and more distant. Friction sounds were well developed toward the base.

Heart: The apex beat of the heart was palpable in the midaxillary line, seventh interspace. There was a mitral systolic murmur transmitted and heard faintly in the back. The aortic and pulmonic sounds were heard best to the left of the midclavicular line.

Liver: The liver was a finger-breadth below the costal margin, and there was some tenderness in the right iliac fossa. Two apirations in the usual places on the inner side gave negative results.

X-Ray Examination.—The *x*-ray examination with the screen, showed what appeared to be an empty abscess cavity in the upper part of the right chest, and a filled cavity in the lower part of the right chest. The skiagraph pointed to the same conditions. The autopsy showed that the inference was right about the empty cavity above, but the supposed filled cavity in the lower part was in reality a bronchiectasis in which the bronchial tubes were filled with secretion.

Autopsy.—The right lung, upper lobe, was completely consolidated. A small abscess with thick organized wall on the anterior surface, and a large abscess near the hilum with numerous small metastatic abscesses in the lower portion were found. The middle lobe was normal. The lower lobe was crepitant. There were no nodules. The bronchi were markedly dilated in the lower portion and surrounded with a good deal of fibrous tissue. The left lung showed complete bronchiectasis and atelectasis and obliterative pleuritis, and there were also obliterative pericarditis, dilatation of the ventricles of the heart and some atheroma of the mitral valves, and commencing hypertrophic cirrhosis of the liver.

Case 7.—The second case of single abscess was in a white man who had pneumonia and hemorrhagic nephritis. It was hardly large enough to be diagnosed during life, since it was only about half an inch in diameter, but it had a well-developed encircling wall of fibrous tissue.

ENDOCARDITIS AND PERICARDITIS.

Case 8.—A colored man, aged 25, who had had rheumatism and typhoid fever, developed pneumonia of the right side from the spine of the scapula to the base. There was also a patch of consolidation beneath the left scapula. The crisis occurred on the tenth day, but the temperature rose gradually again to 102 F. and kept elevated for about a month. The heart showed no murmur on admission, but the sounds were dull and the apex was a little outside of the normal position. During this interval of fever, the sputum on several occasions showed pneumococci but no tubercle bacilli, and a blood culture a few days before the crisis was negative. Almost a months after the crisis there was an exacerbation of fever, pain in the left chest with the development of a pericardial friction at the base, and a well-marked systolic and diastolic murmur at the apex with reduplication of the second sounds. Later there was also a pericardial friction at the apex. Still another month later the pericardial friction had entirely disappeared and the endocardiac murmur had improved, though that persisted at the time of his discharge.

---

[1] Archives of Pediatrics, September, 1905.

Case 9.—A white man who said he was fifty, but who looked sixty, had emphysema, myocarditis and atheroma. The fourth day after admission he showed a consolidation of the right apex, and about this time there was acute dilatation of the heart. The apex beat became diffuse, the percussion area somewhat increased and the pulse ran to 200 and above, the rhythm being fetal in type. On the eighth day the temperature fell to normal and remained at about normal for a week. During this time the pulse ranged from 80 to 90. At the end of the week the temperature rapidly arose, reaching 104 F. in the next few days. The pulse ran up from 100 to 140 and became irregular. Then a well-developed systolic murmur at the aortic cartilage, well transmitted into the neck, developed and later this murmur became both systolic and diastolic, with its maximum intensity at the aortic cartilage. The aortic second sound was entirely obliterated, the pulse became of the Corrigan type and the man died on the fifth day from the onset of the endocarditis.

Case 10.—Another case of endocarditis was that of a colored man, aged 23, who had pneumonia on the right side posteriorly with crisis on the eighth day. The heart sounds were perfectly normal on admission. He had a practically normal temperature for six days after the crisis, when there was a simultaneous rise in temperature and development of a roughening of the mitral systolic sounds. The temperature persisted for twelve days and then fell to normal, but the systolic roughening still persisted when the patient was discharged almost a month after its first appearance.

Case 11.—A white woman, aged 20, had a chill and developed at once a consolidation and pleuritic rub at the right base. She had on admission a presystolic mitral murmur which was evidently an old condition. A week after the chill, the signs of mitral obstruction had increased and there had developed an indistinct diastolic murmur heard best over the aortic area. Still a few days later and there were plain signs of aortic insufficiency, as shown by a soft-blowing diastolic murmur faintly heard in the aortic region transmitted down the right side to the sternum, and still heard at the ensiform. The aortic second sound could not be heard. A little less than a month after the onset of the pneumonia, the heart appeared to have returned to its condition on admission; the temperature came down by lysis, reaching normal on the ninth day, and during the days when the roughening at the aorta was developing the temperature was normal or slightly subnormal. Also the endocarditis did not appear to affect the leucocytosis, as the leucocytes on the third, fifth and tenth days were, 23,400, 17,600 and 11,600, respectively.

Two of the cases of endocarditis, one with pneumonia and meningitis, developed a pericardial friction during the course of the disease.

RELAPSING PNEUMONIA.

Case 12.—A colored woman, aged 22, was admitted to the hospital with all the typical signs and symptoms of croupous pneumonia of the upper third of the right lung. On the twelfth day from the onset she had what appeared to be a true crisis, but almost immediately the temperature rose again and at the same time she complained of pain at the opposite apex and gradually developed consolidation of the whole posterior aspect of the left lung. The temperature persisted in her case for five weeks from the onset. The left side was tapped twice, once with no result and once half an ounce of cloudy fluid was withdrawn, which on examination showed no pus. Her mother had died of pneumonia, her father of tuberculosis and during the attack she, herself, gave but a slight reaction to the infection as shown by the mild temperature variations and the moderate leucocytosis ranging from 9,000 to 12,000. However, her sputum was always free from tubercle bacilli and she made a good recovery.

PLEURISY.

Case 13.—A woman, aged 25, with pneumonia of the left base, proved rather conclusively that occasionally persistent pleurisy may be the cause of continued fever after the crisis. She had her crisis on the seventh day, but the friction rubs persisted at both bases, especially on the affected side. A week after the crisis there developed severe pain over the previously consolidated area, which persisted for over two weeks and was accompanied by a temperature of about 100 F. That this was due to the pleurisy, seemed evident from the persistent pain, the disappearance of the previous bronchial breathing, the impaired vocal resonance, the distant breath sounds and from the fact that the screen showed that the area of consolidation had largely cleared up above and at the very base, but that above the base and at the site of the most acute pain, a deeper shadow still persisted.

BRONCHITIS.

Several cases of bronchitis showed a mild persistence of temperature for some time after the crisis which it seemed perfectly plausible to attribute to the bronchitis which existed in the unaffected lung, and in one case in the unconsolidated portion of the affected lung. All the signs and symptoms of the pneumonia pointed to a croupous process. It seems probable that we do not dwell enough on the rôle that a bronchitis, especially in the unaffected lung, may play in the prognosis of pneumonia. Such a condition has seemed to me to be particularly apt to exist in those past middle life who have already an existing heart lesion.

OTITIS MEDIA AND MENINGITIS.

In two cases in the series there was a return or increase of the fever due to otitis. Of course, it is only the obscure cases of ear trouble that are confusing.

Case 14.—A robust man, aged 35, developed a typical pneumonia of the right lower lobe. Headache followed by delirium was an early symptom. One the fifth day from the chill he showed a retraction and rigidity of the neck, and well-developed Kernig's sign. The spinal fluid showed pneumococci and a well-marked to and fro pericardial friction sound at the base of the heart developed the day before death which occurred six days from the onset.

PAROTITIS.

Six years ago I reported[2] a case of suppurative parotitis occurring during an attack of croupous pneumonia in an elderly woman. The first evidence of suppuration was on the seventh day, but so rapid was the development that it discharged on the tenth day. The patient made a good recovery and died, a year later, of interstitial nephritis, which existed at the time of the pneumonia. The number of cases that were reported immediately afterward seemed to show that parotitis as a complication of pneumonia was not so rare as the published cases led one to suppose.

HEMORRHAGIC NEPHRITIS.

Case 15.—A young white man, aged 25, a silver printer by occupation, was admitted with signs of consolidation of both bases, but worse on the right. The urine on admission showed only albumin .05 per cent and hyaline casts, but a few days later there developed evidences of hemorrhagic nephritis—albumin, hyaline, pale and dark granular, leucocytic and blood casts, with some red blood corpuscles, were found. Just when and how the process began is not clear from the history, but the temperature fell from 103 F. to normal the second day after admission and remained at normal or a little sub-normal.

---

[2] Philadelphia Med. Jour., March, 1900.

until death eight days later despite the fact of the small circumscribed abscess in the lower right lobe, and of the nephritis.

Autopsy.—The autopsy showed the right lower lobe solid, the upper half in a condition of gray hepatization, and the lower half in red hepatization. Deep in the substance was an abscess one-third of an inch in diameter, with a well-defined wall. The left lower lobe showed scattered pneumonic areas. Of the kidneys there is recorded only that the cortex was diminished and the congestion of the entire organs, intense. The cultures after the postmortem showed in the heart a mixed culture of colon bacilli and *Staphylococci aurei* in about equal parts. The spleen and right lung showed pure colon bacilli, and the left lung pure staphylococci.

Remarks.—There is much to be desired in the history of this case to determine whether it really was a true case of croupous pneumonia with secondary infection, or whether it was primarily due to the bacteria found postmorten.

THROMBOSIS AND NEURITIS.

Case 16.—A white woman, aged 39, with pneumonia of the left lower lobe had her crisis on the eighth day. Four days later there was a very slight elevation of temperature, and a sharp pain developed in the left leg from the middle of the thigh to the heel. There was no tenderness on pressure, and no disturbance of sensation other than the pain. About a week after the first appearance of the pain, the leg began to show an edematous swelling. The whole history pointed to the fact that it was a femoral thrombosis. This same woman first complained of numbness of the right hand along the course of the ulnar nerve, two weeks after this crisis. Two days later there was distinct numbness of the distribution of the left ulnar nerve. There was some pain, some weakness and disturbance of sensation of both arms and hands. The limitation of the numbness to both ulnars would make one think it was probably due to pressure, but there was nothing peculiar noted about the patient's decubitus at any time, and at the time the neuritis developed, she could be propped up and could soon sit alone. The disturbance was marked enough at one time to require splinting of the right arm and hand. The hands were better, but not well when she left the hospital about six weeks after her admission.

COLITIS.

Case 17.—During the past winter a robust man who appeared to be doing well with pneumonia, was seized with most intense enteritis which resisted all treatment and to which the patient soon succumbed. As a postmortem examination was refused, one can only infer from its remarkable severity, that it was a croupous colitis.

OTHER SEQUELÆ OF PNEUMONIA.

Among the sequelæ of pneumonia that were evident to the naked eye were two cases of carbuncle, one at the back, the other at the neck, which developed in two young white men about a week after the crisis. Both men had good kidneys. A third man of middle life had two abscesses of the chest, one of which might have been due to the single salt injection that he had had, but the other one was so far from the site of the single puncture as to make this cause unlikely.

Case 18.—A white man, aged 40, who drank from ten to fifteen glasses of whisky daily, well demonstrates some of the phases of pneumonia in the alcoholic. His attack began with a temperature of about 100 F. which usually reached normal in the mornings and which persisted for over two weeks. The sputum was bloody and at times was profuse enough to be called a hemorrhage. After two weeks the material expectorated became rather milky white, but showed only pus and no tubercle bacilli. The consolidation was under the right scapula. Ten days after admission he developed delirium tremens, and after the delirium tremens he relapsed into a condition of confusional insanity which persisted for many weeks, but he finally made a good recovery.

Several patients had delirium for a few days after the crisis, which cleared up on forced feeding more rapidly than the delirium in cases of typhoid fever, which often persists for a much longer time because the inanition is greater in consequence of the longer duration of the fever.

SUMMARY.

The causes, then, of postcritical fever in croupous pneumonia are evidently manifold, and the exact cause can be determined in a given case only by careful and repeated examinations of the patient. Even when such examinations are apparently negative one should be slow in attributing the fever simply to delayed resolution or to autolysis alone. The number of small abscesses found in the stage of gray hepatization, postmortem, would incline one to believe that it is not alone the slow resolution, but perhaps more often a varying degree of this purulent tendency, especially in the stage of gray hepatization, that explains the fever. Though the abscesses are usually multiple, one case showed distinctly one small abscess which in itself might have caused the persistence of fever, and it is conceivable that such an abscess may discharge undetected, or, surrounded by an encysting wall, be gradually absorbed and the patient recover without the exact cause of the fever ever being known. Even an encysted empyema, if small, may be hard to demonstrate.

The value of the Roentgen ray in detecting these conditions in the chest is variable. It is the common experience of a thickened pleura in this class of cases that renders the *x*-ray of less value. Given a previous consolidation without much thickening of the pleura and the shadow is less uniformly dense than that of fluid in the pleura, so that under such circumstances a loculated empyema or a full abscess cavity is apt to stand out by its dense shadow in contrast to the less homogeneous shadow of the resolving pneumonic consolidation. Under similar circumstances an empty cavity is even more evident, surrounded, as it usually is, by its wall. One case showed that an area of bronchiectasis, with the bronchial tubes filled with secretion, simulated an abscess. The mistake was all the more natural, as there existed above a well-defined cavity of an abscess that had discharged.

It is doubtful if the number of endocardial and pericardial involvements in this series really represents the vast importance that must be attached to this cause as the factor in many fatal cases. One must be alert for this complication, especially in patients who have an old endocarditis or atheroma. The cases here detailed show that the right side of the heart is by no means free from serious involvement. The development of a systolic murmur may be explained by the anemia well known after pneumonia or by the relative insufficiency due to the weakened heart muscle, but the development also of a diastolic murmur usually means that there is genuine endocarditis, as is proven by the autopsies.

DISCUSSION.

Dr. DeLancey Rochester, Buffalo, said that mediastinal abscess as a course of postcritical fever had twice occurred in his practice. He also wished to confirm the statements made regarding ear troubles. He had two cases of pus in the middle ear without pain and without the presence of pus in the external meatus. In another case he had there was a subdural abscess producing a hemiplegia on the opposite side of the body, but that most cases of postcritical fever were due to empyema of the pleura.

Dr. N. S. Davis, Chicago, said that unquestionably the most important cause of postcritical fever met with after croupous pneumonia is inflammation of the pleura and he believed it to be our duty to search with the greatest care for this cause in out of function, because the man was a right-handed man, and the left clung to life because of its normal 180° axis.

I have a little fellow twenty-seven months old who is wearing B. E. + Sph. 10.00, apparently with almost equal acuteness of each eye. We shall probably find some astigmatism when he is a year or two older. His strabismic eye is now straight, and the glasses are so grateful to his nervous system that the baby yells, *Wo sind meine Gläzele,* if they are left off a minute.

A man of 36 could barely count the fingers with his right eye, and no lens seemed to improve. I stuck to the problem instead of calling it "amblyopia," and I found that — Sph. 6.50 + Cyl. 9.00 ax 10° saved the man's eye and gave him 20/50 vision. This 15.5 D. in a non-traumatic case, at least in one meridian, is the highest I have ever met. There was 6.00 D. in the left, with 20/40 vision.

3. *Inflammations and Traumatisms.*—These may have such organic and irremediable defects in one, or even in both, eyes, that the visual act becomes thereby pathogenic. The most common of these conditions is, perhaps, the nebulous or leucomatous cornea following keratitis. In the young (and the younger the better the success) we may often lessen the opalescence by Pagenstecher's ointment and massage, and other methods of treatment. Unfortunately, Dr. Alleman's proposal of electric stimulation by the contact electrode has not, as was hoped, been adopted or demonstrated of much value.

A profound impression was left on my mind by the history of one patient, a man sent to me by a general physician, with the ready-made diagnosis of "migraine." The man had never had sick headache, so his disease was not "migraine;" the general physician could not cure this patient's headaches, so he sent him to me. I at once notified the physician, 1, that the man never had had "migraine;" 2, that the man's headaches were caused by eyestrain; 3, that in all probability I could not cure the man of his eyestrain headaches. This was because he had a nebulous cornea of the left eye, also a very high mixed astigmatism, giving about 20/50 vision. I ordered glasses, and impressed on the patient the necessity of returning soon and frequently. Pursued by the relentless mystery of his pain, the man fled to the neurologist, who drugged and massaged him without relief; the neurologist then turned him over to the rhinologist, who took out all the turbinates of one side of the nose, saying those of the other side must be taken out, and eventually the frontal sinus opened up "by two holes." The man fled. In this man's case, I shall exclude the left eye from vision, if I can get him out of the hands of the operating rhinologists and the neurologists.

These untransparent corneas almost always cause eyestrain sometimes of a most grievous severity. I fear we greatly neglect to take this fact into consideration, and dismiss without explanations to the patient, and sometimes without correction of the ametropia. In rare cases, possibly the ametropic correction may not, especially at first, give relief; it may more rarely even increase the eyestrain, by stimulating the waning and fading effort and possibility of helpful and useful fusion which must be finally renounced. The problem then becomes most complex and perplexing, and demands the highest judgment and skill to meet it. But purposely to exclude an eye from vision under such circumstances is a hazardous procedure, and needs long pondering. I have not, I think, been compelled to do so more than once, while final success has generally followed ingenuity and persistence to save. I have had one most instructive case which astonishingly proved the wisdom of *nil desperandum.* It was that of a man nearly frozen to death. The keratitis had produced such a dense leukoma, and apparently ruined eyeball that several good oculists advised enucleation, fearing sympathetic inflammation of the other imperfect, but still functional eye. Enucleation was not allowed, and later the better fellow was utterly ruined, and now with the eye pronounced doomed, the man has 20/40 vision and lives a useful life.

Incurable eyestrain is a necessary result of conical cornea.

The adherent irises following neglected or badly treated iritis are often sad evidences of professional ignorance and lack of skill. If occlusion of the pupil is added, not much is left except despair, and "making the best of it." I judge that an artificial pupil generally only adds to the misery. In such cases hope of cure being renounced, the choice may lie between *laissez-faire,* or hastening the exclusion of the eye, or of the cortical center, from participation in vision. But, first, there should be a desperate attempt at ametropic correction, for, with it, nature may keep up the struggle with less pain, and with less eyestrain; even a small degree of vision preserved in one eye, avoids the danger of blows, injuries, etc., upon the blind side of the head. Rents at the corneal border of the iris, causing double pupil, etc., inevitably produce eyestrain until nature excludes the eye from visual influence. Should tattooing sometimes be tried before it is too late? I have one patient with traumatic rupture of the iris, the pupilary edge being attached to the cornea. There is also an undiagnosable irregular astigmatism. The eye is too good to exclude *from vision, and the patient's symptoms are not those of* traction on the adherent iris; they are due to eyestrain, but I can not relieve them. For ten years I treated a patient, one of whose eyes had been ruined by a faulty operation. There were three artificial pupils. I had to exclude the eye from vision until the sensation was dulled and denied.

Cicatrices in or near the cornea from wounds, injuries, and operations, and producing irregular astigmatism, not seldom as we all know, cause eyestrain.

Bungling operations on the lids, entropion, ectropion, etc., have also an influence in making the visual act harder to carry out. One of my patients had a fistulous opening on the cheek through which the tears trickled all her life. It was made by a great surgeon twenty-five years ago in an attempt to open the tear-duct in dacryocystitis. She had had enough of operations, and would not dream of more. "Weeping eyes" suffused with tears are somewhat common, with eyestrain as an inevitable result.

There is in my mind little doubt that the chief cause of senile cataract is uncorrected or miscorrected ametropia. In eyes previously long and properly glassed it does not occur. We all know how incipient cataract often increases eyestrain and necessitates frequent changes in refraction. "The headache of incipient cataract" has become a familiar term. If the cataract is monocular and is advancing, I think it generally advisable to exclude the eye somewhat early. Usually the earliest stages do not affect the center of the pupilary area. When the clear space chosen for vision is at one side of the pupil, eyestrain inevitably follows from the effort to get the macula in line with it.

I have had cases in which vitreous opacities seemed to cause or increase eyestrain. They oftener cause the patient great worry and quacks make much money out of them. Muscæ volitantes do not cause eyestrain, if they are really physiologic, as properly speaking they generally are. One has constantly to calm the fears of patients in reference to them.

Ametropic choroidoretinitis[2] is very common, indeed, almost always exists in long uncorrected ametropia. It is a perfect example of the "vicious circle" of disease, for it is the result of eyestrain, the local effect, and at once it becomes the cause of further eyestrain, both local and general.

Other forms of choroiditis, and of retinochoroiditis, do not usually produce eyestrain unless the macula region is implicated, and unless it has ended in floating vitreous opacities. If one macula is destroyed or badly injured, eyestrain is inevitable until the eye is dulled to functionlessness. If both eyes are affected, the eyestrain must be persistent. I had a patient with both maculas so equally and irremediably hurt that new maculas had formed above the old ones. I sent him to live on a Western ranch, where he is happy.

Tenotomomania usually results in incurable eyestrain. After the muscle-tailor has done his work there is not much we can do, except to apply the proper glasses and wait for Nature's possible undoing of the injury through years of suffering. I remember one patient who had no 'phorias whatever after twenty-eight tenotomies by one graduate tenotomist. The machinery of head and body was largely devoted to getting his head in position to see every degree of change of image. His ocular muscles had been surgically paralyzed.

4. *Amblyopia, or other Injury of Ametropia.*—I have elsewhere published a study of "Amblyopiatrics," or the cure of amblyopia, when it is curable. The majority of patients have some degree of ametropic choroidoretinitis or amblyopia from eyestrain, and the majority of these are entirely curable. In extreme cases it is not curable.

The eyestrain of incurable amblyopia usually depends on the amount of near work done. A young lady patient of mine with 20/40 vision from old uncorrected astigmatism was free from symptoms in her home, but when she went to college there was great suffering. In childhood, in a very few years, strabismus will often render the eye visually useless, even though made cosmetically useful by surgical operation. I had one patient with what I called squint hemianopsia, the temporal half, vertically, of the retina being wholly blind. One may never be sure how much the amblyopia from disuse which follows the eyestrain exclusion of an eye from visual function is due to retinal or cortical causes. And one can also never be sure that the worst cases may not be improved by long and patient amblyopiatric methods.

Some years ago a European physician found a couple of children supposably blind in a blind asylum, who still had some perception of light. He educated this remnant of function, first, in distinctions of light; second, of color; and third, of form, until the children were taught to read and were rescued from a life of blindness. A blind patient over 50 years old has been suddenly brought to perfect physical and sensational vision by operation, but it took some years to perfect intellectual vision. The lesson in all cases of amblyopia is that we should trust Nature and help her by ingenuity and patience to improve amblyopia, and to renounce only when the impossible is demonstrated. I have had but one case in which I had to exclude the eye from vision, because the little improvement possible was a little improvement, and was not further improvable. The influence of dextrocularity in conjunction, of course, with dextromanuality will usually result in the retention of better visual acuity in the right, even with greater ametropia in the right. Nature will always aid more to save the right-eye vision than the left in the dextral.

Accommodationlessness, that is, undeveloped accommodation, may be a result of chronic exclusion of one eye from function for near work, caused, of course, by ametropia. I have had at least three patients whose ametropia was such that one eye was used for near only, and the other only for distance. The latter eye had no accommodational power. If caught early enough in life the defect may be remedied by bifocal lenses. If the patient has passed adolescence, such a device will scarcely prove successful, and the established habit must be permitted to continue; but some eyestrain will also persist. The least intermixture of astigmatism will demand glasses, e. g.,

R. — S. 2.50 — C. 0.50 ax. 50°
L. — Cyl. 0.25 ax. 140°

and fusion will come at once.

Subnormal accommodation[3] is far more frequent than is supposed, and its existence has been a prolific source of many of our past failures to relieve eyestrain. We must be on our watch for it in every patient. None of my successes have been more brilliant or satisfying both to patient and oculist than the half hundred in the past few years, by attention to this most important condition. I now have a child of nine, and another of twelve, wearing bifocal lenses with admirable results. I have found a few cases in which the subnormality differs in the two eyes.

Only the best conscience and the most expert intellect may rightly decide when to persist in stimulating or coaxing an amblyopic eye into use, and when to exclude it.

5. *Heterophoria.*—This cause of eyestrain appears to me refractional in origin and innervational in mechanism, but when it is too high, or of too long standing, it may produce eyestrain, either because too great injury has been done, or because reinstatement of orthophoria is impossible. Preventable all such conditions are, but I have not seen tenotomy of service. In the young if orthophoria is possible, by operation, it is possible by means of glasses, orthoptic exercises, etc. And without proper glasses no operation is useful, because it was the ametropia that produced the heterophoria.

Strabismus has the same law with the exception that its genesis is in childhood, is quickly established, and the irreparable injury sooner completed. With strabismus fixed eyestrain ceases, because Nature has despaired of help, and has renounced effort. Heterophoria is the cry of the dying eye for help; heterotropia is its epitaph. The strabismic death may sometimes be only resignation and coma, and resuscitation still be possible. Undoubtedly we frequently give up the struggle too quickly. But it is murder to delay intervention, as I was taught, until the child should be 7 years old. Such ophthalmology should be put on trial for murder in the second degree. I have cured strabismus by glasses alone in patients over 30 years of age.

In those patients reaching us over 40 to 50 years of age, with high heterophoria, would it be wise to advise operation? I hardly think so. One of the best illustrative cases I have was that of a woman who had 33° of esophoria. I should have lost my patient if I had demanded operation. I incorporated with her ametropic correction 13° prisms in each eye for distance, and 7° for near, and she has never for years had enough discomfort to make her think of operation. By a marvel of the optician's art her lenses are not very heavy or unsightly.

---

[2] See Archives of Ophthalmology, 1890.

[3] See Am. Med., Jan. 21, 1905.

6. Interruptions or Contradictions of the Normal Coördination of Dextrocularity and Dextromanuality.—When traumatism, inflammation or other cause conflicts with or extinguishes the established coördination of dextrocularity and dextromanuality so that the left eye (in the dextral) must take up the proper dextral function of the right, eyestrain, at least for a time, almost inevitably results. There is an awkwardness, indecision, slowness, etc., of action, thought or vision, probably of all three, which may be more or less lasting. I have had a number of such cases, but the particulars are too numerous to find room here.

7. Cerebral or Nerve Disease Occasionally Causes Eyestrain.—Paralysis of accommodation, not from peripheral causes, but from cerebral ones, may exist, overlooked, in one or both eyes. Some eyestrain will still exist even with bifocal lenses. Failure of detection may be caused by the cycloplegia and may be present without a noticeable mydriasis. I have had a number of such cases.

Permanent myosis may cause incurable eyestrain because of evident optical reasons. I had one such case in which a famous neurologist could find no evidence of neurologic disease to account for it, and we both failed to bring about any alleviation of the symptoms patently eyestrain in nature. I had a theory that the myosis in this man's case was due to a tiny corneal opacity in the center of the pupil. My neurologic friend scorned such a philosophy.

Slight nystagmus, with small and almost undetectable excursions, flutterings, or tremblings, may, as will be readily understood, produce eyestrain. In one patient, a woman of 50, there was the most rare symptom of rotary nystagmus, which no glasses could cure. And I have had one case of monocular nystagmus that to some degree caused incurable eyestrain, although the young man had only 3/200 vision in the affected eye. Possibly the diplopia of paralytic strabismus may not be properly classed as eyestrain, and yet in one sense it is so. I have had to put two such eyes out of function by a steamed or ground glass, so slightly obscure as not to attract attention, and which at the same time would not allow vision.

There is no evidence that color blindness may coöperate in producing eyestrain, but it is possible that it may do so. Certainly in the beginning stages of optic atrophy there would probably be such an effect. I have reported a remarkable instance of hereditary optic atrophy occurring only in males, transmitted only by females, taking place from 28 to 34 years of age, and running through six generations. While the disease was in its early stages and ingravescent, one of these patients had decided eyestrain symptoms, not to be relieved by any means, of course.

I have had several patients in whom tremor of the head was a source of eyestrain.

I recently discovered one of the most unsuspected ways in which a disease of the central nervous system may produce eyestrain. I have no doubt that my little report is so far unique. My glasses had failed, in part, to relieve in a woman of 40 the symptoms of decided eyestrain in reading, not in writing. There was no subnormality of accommodation or other discoverable cause of the perplexing fact, until I noticed that her hands had a rapid and constant tremor. I placed her newspaper or magazine against a solid body, or in a book-rest, and the shivering was stopped, which caused ocular tiring.

8. Disease of the General System.—This condition, affecting directly or indirectly the nutrition or functions of the eye, may sometimes have some effect in causing eyestrain. This factor has been so ludicrously overemphasized in the past that it needs no more than mention here. Many "conservatives" who care nothing for scientific refraction problems have practically thrown the baby away with the bath, and have really sought to resolve all eyestrain into systemic disease. Although 99/100 of their contention is ludicrously untrue, there is, nevertheless, a possible 1/100 of truth in it. Although diseases of the nose and accessory organs may rarely affect the eyes, the rhinologist, and surely the operative rhinologist will have little work to do when the enormous influence of eyestrain on the nose is recognized. Much the same may be said of the gynecologist, the celiotomist, the gastrologist, and even the general physician.

9. Eyestrain Due to Unhygienic Occupation, Use, or Abuse of the Eyes.—In our offices we have constant evidence of these causes. Most of these cases are obviable or remediable, and their consideration goes over into the chapter on hygiene of the eye. This is indeed a chapter which, speaking resolutely, still remains unwritten, and which, when written, will not become popular reading for a century. During this waiting-time millions of eyes will be ruined, and vast reserves of health foolishly wasted. But in a minority of cases we find ourselves unable to prevent eyestrain, so plainly present. I have often run across the prejudice of employers, school trustees, and especially of railroad officials, against spectacles, even though the employé suffer and the lives of trainloads of people are jeopardized. The trainmen or switchmen say that the superintendent will probably "lay them off" as too old, whether presbyopic or not, if they show themselves in glasses. We should manage to convince the officials of the double folly of their ways.

Half of the clerks, stenographers, bookkeepers, etc., are compelled to carry on their work with poor lights, wrongly placed lights, etc., and when the lighting of their desks is good, the employé himself omits many other wise measures preventing eyestrain. Our school desks and commercial desks are universally flat, but when ophthalmology becomes ophthalmologic, and when civilization becomes civilized, they will be made sharply pitched. The unphysiologic, unophthalmologic, outrageously stupid writing posture of the occidental world begets a big deal of eyestrain, and most of the lateral spinal curvature which curses 27 per cent. of our school children. That we look sharply downward on our writing, etc., instead of off, from, and slightly downward, that we pathogenically angle our paper, are other sources of eyestrain, which we shall long and vainly struggle to change.

There are many other occupations which variously contribute to the conditions of eyestrain.

Lastly comes the fact on which is based the whole theory of the origin of eyestrain, namely, the impossibility of the long and continuous innervation and contraction of any single muscle or set of muscles in the human body. Rhythm is the law of life, and surely of muscular contractility. The modern human eye is often put to tasks which it is incapable of carrying out. Normalized accommodation (that is, accommodation without any ametropic morbidizing), is in fact always subnormal, when it is required to be executed with scarcely a break or change for hours, almost a whole day, and for all days of the year and life. Nature never made the eye for such work, and has not outfitted it with an adequate mechanism.

DISCUSSION.

Dr. Peter A. Callan, New York, said that while Dr. Gould emphasizes the effect of glasses, the use of atropin and the shutting out of one eye, he totally ignores the operative side. Dr. Callan does not think that ophthalmology consists alone in the fitting of glasses; it is something broader than that. He said that when Dr. Gould spoke of the treatment of congenital cataract by the use of atropin he probably meant lenticular pigment spots in the area of the pupil and not the kind of congenital cataract which is generally spoken of as such in which the anterior posterior pole of the lens is affected. Dr. Callan said that it would have been better to consider the best means of treating these cases surgically. Dr. Callan thinks that the mistreatment of iritis in the hands of most men is due to the patient not carrying out instructions. Many times he has been obliged to insist that patients go to the hospital in order that the treatment be properly carried out. Dr. Callan mentioned Dr. Gould's reference to an operation for occlusion of the pupil and said that if Dr. Gould means total occlusion of the pupil it is the imperative duty of the physician to operate. Last year Dr. Callan saw a child of 10, with pupils occluded, who was being educated in an asylum for the blind. He performed an iridectomy and the child is now pursuing its studies in the proper way. He said that Dr. Gould may be right in saying that these patients can not be treated by glasses, but that is no reason for subjecting them to life-long misery when operative measures may give relief.

Dr. Callan declared that one might as well claim to prevent gray hair by the use of glasses as to prevent cataract. If one lives long enough there will be haziness of the nucleus, and, though patients are fitted with the best possible correction, they will eventually develop cataract, and it can not be prevented.

He said that no one appreciates more than he does the good that Dr. Gould is doing in his ophthalmologic writings, but for a teacher to cast slurs on the medical profession and to ignore, as he does, the benefits of operative procedure, Dr. Callan thinks is uncalled for.

Dr. Louis Borsch, Philadelphia, referred to Dr. Gould's ninth cause of eyestrain due to use or abuse of the eyes, in which he cites cases of patients straining their eyes by not wearing glasses, because glasses make them look old, and said that there are many more people who abstain from wearing glasses and thus fatigue their eyes than one would at first be inclined to suppose; especially is this true when the oculist prescribes bifocals, for bifocals are popularly supposed to mark a person's age. Dr. Borsch said that when glasses or bifocals are not worn when required, eyestrain results. On the other hand, very often when they are worn strain results that is just as severe, and this is due to the improper construction of these lenses, as most of them are unsatisfactory. For some years he has been endeavoring to devise a lens which would embody all the desirable features of a bifocal from the oculist's, the optician's and the wearer's point of view. These desirable features are as follows: (1) A bifocal lens having the least perceptible line of junction between the near and far portions of the lens; (2) having no prismatic displacement; (3) having no cement to become loose or cloudy; (4) having the optical and geometric centers corresponding with each other; (5) what is of no little importance, a lens that can be made by any lens grinder and at so modest a cost as to be within the means of any one requiring bifocals to gain a livelihood; (6) a bifocal that won't make the wearer look old.

This he has successfully accomplished, and he exhibited this new bifocal, which consists of two pieces of optical glass of different indices of refraction welded together in an electric furnace, thus making a solid piece of glass.

Dr. George M. Gould, Philadelphia, said, in reference to improperly treated iritis, that we all know that 75 per cent. of the cases are not treated by ophthalmologists. It is a great mistake to think of the profession as consisting of a few excellent ophthalmologists in the cities. A great number of the patients are not seen in the cities, and even there how many cases of iritis get into the hands of the oculist? In regard to the cause of cataract he said that Dr. Risley has long contended that it is due to choroidal disease, and Dr. Gould contends that choroidal disease may be due to eyestrain. He has never seen a patient who had worn proper glasses develop cataract. He does not ignore operations at all. When they are indicated and required, of course, they are to be performed. His remarks referred to cases in which operations are not indicated. As to maligning the profession, that is "tommyrot." It is the patient who must be cared for without regard to injury to our special or professional pride.

AN ANTISEPTIC TREATMENT OF TUBERCULOSIS.

H. H. MALONE, M.D.
AUGUSTA, GA.

In the treatment of tuberculosis we have to deal with tubercle bacilli, on the one hand, and the human being on the other. The quantity of powerful drugs daily taken by those unfortunates who have acquired the drug habit demonstrates the power of the human organism to accommodate itself gradually to changed conditions. It appears reasonable to suppose that if powerful poisons, such as chloral, cocain, arsenic, morphin, etc., can be tolerated by the human subject in gigantic quantities, then a like tolerance can be created for certain other drugs of less toxic influence, but possessed of bactericidal properties.

Through a tolerance thus acquired it may be possible to administer such germicidal substances in quantities sufficient to inhibit, damage, or even destroy pathogenic bacteria, such as tubercle bacilli, within the body, and to do this without injury to the human body. This hypothesis presupposes the lack of a similar or at least equal tolerance acquired by the bacteria under these circumstances.

TUBERCLE BACILLUS AND GERMICIDAL AGENTS.

The tubercle bacillus is restricted within a comparatively narrow range of environmental conditions for its growth and other vital activities. Many low forms of vegetable life do not possess an accommodative power equal in degree to that of the higher forms of animal life. In general the human body does not offer favorable conditions for the multiplication and pathogenic activities of the tubercle bacillus, and when such conditions of the human body exist they can by proper measures often be rendered unfavorable for the bacillus. The tubercle bacillus is sensitive to the addition of even small quantities of antiseptic substances to media otherwise favorable for its cultivation, and we have no experimental proof that through the gradual addition of increasing quantities of an antiseptic the bacillus can acquire a tolerance of the toxic effects analogous to that acquired by a human being to certain drugs. When placed in a culture tube under suitable surroundings, and a sufficient quantity of a given antiseptic is added, destruction of the tubercle bacilli results. It matters not how gradually the antiseptic is added; it is only requisite to introduce a certain fixed amount to accomplish the death of the bacilli.

By the judicious introduction into the human system of certain antiseptics proved to be destructive of the tubercle bacillus, great quantities may be ingested without apparent injury to the human tissues, and, it would seem, enough to injure, if not to destroy, the tubercle bacilli. This result is probably attained not solely by the direct germicidal action of the antiseptics used, but also indirectly by the change in the environment of the bacilli and increased efficiency of the defensive forces of the body in combating the germs and their effects. If a patient afflicted with tuberculosis weighs 130 pounds, about one-thirteenth of this weight, or ten pounds, is blood. The introduction of seventy grains of an antiseptic into the circulation would result in a ratio of one part of the antiseptic to one thousand parts of fluid, a concentration fatal in the case of certain antiseptics to many bacteria.

While, of course, we must consider many other factors than the percentage of the antiseptic in the blood, such as its further diffusion in the lymph and tissues, its possible decomposition and rapid elimination, irregularities in its distribution in different parts, still, in view of such considerations as those stated, it does not seem to me to be so hopeless a matter, as is often assumed, to secure direct injury and probably actual destruction of tubercle bacilli within the body by the administration of suitable germicidal substances in requisite amounts, and this without harm to the cells of the host. We have, furthermore, the advantage of being aided by the leucocytes and other vital forces of the human body, and of the fact that the circulating and other fluids of the human body are not so suitable a culture medium for tubercle bacilli as the culture fluid of the laboratory test tube. If I have reasoned correctly, we have now arrived at the point of selecting the most suitable antiseptic or combination of antiseptics.

IODIN AND PHENOL.

We have reason to believe that iodin is a powerful antiseptic, and, in addition, promotes constructive metamorphosis under certain conditions which are usually present in tuberculosis. Iodin is absorbed in combination with alkalis and probably with proteids, and has long been used in the treatment of tuberculosis, although the mode of its action is not well understood. One of the most powerful and generally useful antiseptics, especially in the presence of albuminous material, is phenol, which, furthermore, lessens the irritative properties of iodin and permits administration of the latter in larger doses. In addition to its valuable effects on iodin, phenol, we find, possesses the property of destroying most organized ferments of animal and vegetable life. It is admitted that bacteria and moulds are readily deprived of their characteristic power by solutions of phenol, whilst chemical ferments (enzymes), such as pepsin and ptyalin, are much less readily affected. Some authorities claim that chemical fermentation is entirely prevented by strong solutions of phenol. However this may be, I have found that patients taking daily more than one dram of phenol gained weight for fourteen consecutive days. Hence, phenol under certain conditions also promotes constructive metabolism.

Phenol, like iodin, has irritating and caustic properties which can be materially lessened by proper dilution, and still further by the action of camphor, which is also an antiseptic, and which renders it possible to attain the maximum dose of phenol in the minimum time. Phenol passes through the tissues unchanged for the most part, although a certain part undergoes partial oxidation. The etherial sulphates in the urine are increased, while the ordinary inorganic sulphates are diminished and may disappear. The olive-green discoloration of the urine, familiar to those who misuse the drug, bears no definite relation to the amount of phenol in the blood, nor to the danger of poisoning. The discoloration may be produced by a small amount of phenol, while very much greater quantities make no change in the color of the urine.

By gradually increasing the dose, far greater quantities of carbolic acid may be given to advantage than the authorities would lead us to believe. It has recently come to my attention that as much as twelve to fourteen grains have been administered at a dose every two hours in the treatment of influenza by Wigglesworth, and of plague by I. M. Atkinson,[1] presumably from the start, but my own experience justifies the belief that much better results are obtained by beginning with smaller doses. There are a great many cases of tuberculosis in which such large doses can not be endured from the start, owing probably to functional inabilities of certain organs. It is the injudicious method of using the drug which is responsible for its evil effects.

For many years these drugs have been recommended in the treatment of tuberculosis with uniformly negative results, probably because they were not combined so as to deprive them of some of their evil effects, and consequently they were not pushed to the point essential to accomplish the desired results. In this connection it is interesting to note, in addition to the beneficial results reported by Wigglesworth and by Atkinson, the successful results obtained by Bacelli and Ascoli in the treatment of tetanus by phenol, and by Dr. Quill in the treatment of typhoid fever with a mixture containing phenol and spirits of chloroform.[2] Considerable misapprehension doubtless exists both as to the dosage and as to the toxicity of carbolic acid, a misapprehension based on the cases of poisoning resulting from its external use, or from its administration in too concentrated form. There are unquestionably individual idiosyncracies as regards susceptibility to carbolic acid, but I agree with the authorities cited in the opinion that in proper combination and in proper dilution carbolic acid may be taken internally in far larger doses than have been customary. I, furthermore, believe that a measure of tolerance may be established by gradually increased doses.

DOSAGE.

The doses essential to accomplish the desired results are in conflict with the teachings of recognized authorities, but the results obtained demonstrate the value of the deviation from the accepted teachings. From what some might consider undue quantities, observations failed to reveal any derangement or morbid change in function or structure of any organ or tissue.

The formula which I have successfully used is as follows:

Phenol	m. 160	11
Spiritus of camphor	ʒ 3½	14
Tincture of iodin	m. 160	11
Glycerin C. P.	℥ss	15
Cherry laurel water		
Chloroform water		
Cinnamon water		
Tar water, of each enough to make	℥ 15	450

Mix and allow to stand until all free iodin disappears, then make an emulsion by adding one ounce, each, of cod liver oil and powdered acacia. Begin by giving one teaspoonful in a half cup of water every four hours, and gradually increase the dose to a tablespoonful at intervals of one hour. Should it become necessary, a stronger solution may be substituted here, or the quantity may be further increased, depending on the weight and tolerance of the patient. Technic plays an important part in the management of each individual case.

---

[1] The Lancet, 1899, vol. i, p. 958; also 1899, vol. ii, p. 1589, and 1903, vol. ii, p. 754.

[2] Potter: Materia Medica, Pharmacy and Therapeutics, tenth edition, p. 381.

MODE OF ACTION.

As to the precise mode of action of each of the principal ingredients of the foregoing formula, it would be unwarrantable to make too positive statements. I incline to the opinion that there is a combination of direct antiseptic action on the bacilli with a favorable influence, exerted particularly by the iodin and the camphor, on phagocytosis and other protective agencies of the living body. The leucocytes are increased in number, and the symptoms indicate neutralization of toxins or cessation of their formation. An interesting phenomenon is the darker staining of the tubercle bacilli by carbolic fuchsin in the sputum of patients under this treatment.

I reserve for another occasion the detailed report of the results of the treatment, but these results as regards disappearance of the bacilli and increase in weight of the patient, and in a number of instances of even advanced pulmonary tuberculosis as regards apparent arrest of the disease and restoration to health have been so favorable that I desire to place in the hands of the medical profession the opportunity to make trial of the treatment.

While I have been led to the adoption of the treatment partly by hypothetical considerations, which I have set forth, of course, the essential test of its value must rest on facts accumulated by experience, independently of the correctness or error of the hypothesis.

NASAL DISEASE AND NEURALGIA.*

LEWIS S. SOMERS, M.D.
PHILADELPHIA.

The intimate relation existing between headache, migraine and neuralgia at times renders the differentiation of one from another of considerable difficulty, but as it is desired to consider only the latter in relation to nasal disease one must clearly appreciate what is meant by this term.

A comprehensive definition is: "Neuralgia is pain in a nerve or nerves, or radiating along the course of a nerve, of a severe, darting or throbbing character, intermittent, with sensitiveness of the skin and tender points where the cutaneous branches are given off from the deeper parts."

As with headache, the nose is a frequent and yet unrecognized cause of many cases of trifacial neuralgia, and, while it is not desired to imply that nasal and accessory sinus diseases are the most frequent factors in its production, yet they play an important rôle. Hence in all such cases of neuralgia these parts should be carefully examined, a procedure which, unfortunately, is rather the exception than the rule.

As both the nasal interior and its accessory sinuses are supplied with sensation by the trifacial nerve and its branches, and as this nerve is more frequently the seat of neuralgia than all other forms combined, it is evident that affections of these structures should not only involve some branches of the nerve reflexity, but, still more important, directly, and this occurs in many cases of trifacial neuralgia when no apparent cause is evident, because these structures are not investigated or are entirely neglected. Corroborative evidence of this is shown in cases in which, after operation in the nasal interior, neuralgic pains are observed along various filaments of the superior maxillary branches of the trifacial nerve, radiating into the teeth of the upper jaw and through the mucous membrane of the buccal surfaces. In common with neuralgia from any cause, that form resulting from disease of the nasal chambers, shows periodic variations in its intensity, in many instances being influenced by pressure between adjacent tissues, but there is usually no definite relation between the focus of disease and the seat of pain, it being not uncommon to find neuralgia in various portions of the head in cases of the same affection, in some instances the pain being on the side opposite to the nasal lesion.

The seat of pain in the individual case is practically constant, and unless additional tissues become involved in the morbid process it is unusual to find the original neuralgia changing its position, but in severe cases one finds, when a main branch of the nerve is involved, that the pain extends in a greater or less degree to other branches. While facial neuralgia frequently results from various nasal affections, but irrespective of the particular nerve which is the seat of the neuralgic process, the type differs in no way from that produced by other causes, either in the nose or sinuses or elsewhere, and from this aspect the basal cause can not be differentiated without obtaining the added light afforded by further studies of the particular case.

Nasal neuralgia, *per se*, that is, neuralgia limited to the nasal structures, does not necessarily follow from disease here, but may be the result of changes in other regions, such as alterations in the Gasserian ganglion or the various nerve trunks emerging from it, when pain may be complained of in the nose in addition to supraorbital or temporal neuralgia. It is also essential to bear in mind that the nasal interior may be abnormal, yet the neuralgia be the result of changes distant from this region, as it has been shown that in primary trifacial neuralgia catarrhal alterations of the nasal mucous membrane are not infrequent as a secondary result; and if care be not exercised these alterations may be mistaken for the cause of the neuralgia and not properly interpreted as one of its results.

So far as the accessory sinuses are concerned, acute sinusitis, and less frequently chronic changes, are a frequent cause of neuralgia and often the excessive pain is considered both by the physician and by patient as the actual disease itself. The character of the pain not infrequently adding to this erroneous impression, as it may last for a week or more with partial intermissions, and then severe exacerbations, the former being ascribed to the analgesics prescribed, with later subsidence of the pain, often accompanied with a purulent nasal discharge, may lead to the correct interpretation of the cause as an attack of acute sinusitis and not, as was believed, an idiopathic neuralgia. In acute inflammation of the sinuses, neuralgia is a frequent symptom, especially supraorbital pain of a throbbing and pulsating character. This location of the neuralgia is the rule, while pain in other regions of the face and head is more or less exceptional. As a presumptive sign of sinus empyema, neuralgia should be given considerable credence, but at the same time it is a deceptive sign and a most irregular one, as it may or may not be present and is rarely localized by the patient with any degree of certainty, although when found in the region of any particular sinus, especially when palpation increases the pain, it may be a symptom of considerable value in detecting the original focus of the trouble.

---

* Read before the Kensington Branch of the Philadelphia County Medical Society, May 8, 1906.

NASAL NEURALGIA.

As a type of pure nasal neuralgia, the following case is illustrative:

CASE 1.—Mrs. I., aged 23, had left supraorbital neuralgia for four years, with severe attacks at intervals of from a week to ten days and often lasting for three days without relief.

After much treatment with no result, she came to me for nasal stenosis which had not been considered as bearing any relation to the neuralgia. The left inferior turbinate was hypertrophied and jammed against the septum and following removal of its inferior border, which was the only treatment adopted, the neuralgia disappeared as soon as the pressure was removed and has not returned in three years.

HYPERTROPHY OF THE TURBINATE.

Of all the affections involving the nasal chambers independently of sinusitis, hypertrophy of the turbinates, and especially of the middle, is the most frequent cause of neuralgia. Both supraorbital and facial neuralgia result from continued pressure of the middle turbinate against the septum, the former resulting from pressure on the nasal branches of the fifth nerve, which may be greatly enhanced if there is, in addition, sinus involvement. The pain of intranasal pressure may be referred to the eye, to the frontal region or to the nose itself, and occurs with hypertrophy of the posterior part of the inferior turbinate, with synechia or spurs of the septum of sufficient size to cause pressure against the opposite tissues. Neuralgia also occurs in acute rhinitis from excessive congestion and intranasal swelling, but more especially when the sinuses are coincidently involved, and then there may be hammering, piercing pains of the supraorbital region, often synchronous with the pulse beat. In the later stages of the same condition, when there is a purulent discharge with obstruction, and especially when deviation of the septum in its upper portion exists, transient neuralgic pains are not infrequent. Of the other conditions in which this symptom is sometimes a feature, hay fever and intumescent rhinitis require mention, as in the former neuralgic pains of the eyeballs, root of the nose and rarely of the occipital region are not infrequent when the attack is severe, while in intumescent rhinitis, hemicrania or neuralgia of the supraorbital, occipital or temporal regions is often part of the disease.

Slight irritation of the nose may produce a degree of nervous instability sufficient to cause severe neuralgia, yet in the majority of cases in which pressure is continued actual nerve changes are undoubtedly produced; the case reported by Lermoyez demonstrates this in a convincing manner. A myxomatous degeneration of the inferior turbinate was removed with the cold snare and galvanocautery, and this was followed in three months by free nasal respiration, but also with severe supraorbital neuralgia uninfluenced by drugs. The scar on the turbinal tissue was then removed, with permanent disappearance of the neuralgia, and microscopic examination showed that a nerve fiber engaged in the cicatrix was acting as the pathologic basis for the pain.

MAXILLARY SINUSITIS AND NEURALGIA.

As an example of neuralgia resulting from maxillary sinusitis, the following case is suggestive of nerve implication:

CASE 2.—Mrs. H., aged 32, had been operated on through the canine fossa of both sides for antral empyema, two years before she came under my observation. The anterior end of the inferior turbinates had been removed and free drainage of the sinuses was obtained by large openings into the external nasal wall of each side. For the past year she has suffered constantly from infraorbital and supraorbital neuralgia.

Examination eliminated other sinus involvement and pointed to nerve implication from necrosed bone in the maxillary sinus walls. This was verified by curetting the softened bone areas, so that following this the neuralgia was no longer a source of annoyance, although a mucopurulent discharge still persisted. A few months later neuralgia recurred on the left side and that sinus showed further caries of its walls, but no further measures have been taken to remove the diseased bone.

The incidence of neuralgia from the maxillary sinus is probably not so common as that from the frontal, although the nerves are more exposed in the former, but its physical conformation is such that pressure of retained morbid secretion is rather infrequent compared with similar conditions of the frontal sinus. Infraorbital, supraorbital and dental neuralgias are not unusual in acute and chronic maxillary sinusitis, and when present are of presumptive value in suggesting antral disease, frontal neuralgia being most common, but any severe facial pain should direct attention to this sinus. In acute inflammation, the pain is often mistaken for simple neuralgia, as it is apt to involve the teeth and to extend into the temple and is a common symptom. In chronic empyema of the maxillary sinus, however, neuralgia is not so frequent, but when present it may involve half of the head, like migraine, or intense pain may be complained of over the facial surface of the superior maxilla. It is often periodic in intensity, increasing in degree for several hours, then diminishing and frequently disappearing later in the day, to return again in the morning. In such instances the neuralgia is a direct symptom of nerve irritation from inflammation of the mucus lining of the sinus, the superior dental nerve running along its walls, and it is not infrequent to find the thin bony covering dehiscent in some areas, so that from the superficial position of these nerves the pain is referred to the nerve trunk and intense neuralgia may result. In some cases this may not be so severe, but there will be points of tenderness over the nerve and especially at the point of exit of the infraorbital nerve.

FRONTAL SINUSITIS AND NEURALGIA.

Acute inflammation of the frontal sinus is always accompanied with headache and not infrequently with severe neuralgia. The following case illustrates this feature:

CASE 3.—Miss N. aged 21, following an attack of acute coryza, developed violent right supraorbital neuralgia which was continuous and prevented her from sleeping.

She was seen after the neuralgia had lasted for three days and analgesics had failed to give relief. Examination showed acute right frontal sinusitis with retention of secretion and the slightest pressure over the supraorbital nerve caused exquisite pain. After reducing the swelling of the frontal canal with cocain and adrenalin, a profuse discharge ensued on this side and relief was immediate, the remaining tenderness over the sinus disappearing in a few days.

In all forms of frontal sinusitis, whether due to congestion of its mucous membrane accompanying acute rhinitis or resulting from pus retention of chronic empyema, supraorbital neuralgia of the affected side is frequently observed. It differs in no way from the frontal neuralgia found in many affections, as the pain may be paroxysmal, often periodic and extending toward the occiput; at times it annoys the patient only slightly, again it is excruciating, and the usual medicinal measures used for neuralgia are utterly without value. The pain may be bilateral, but it is more frequently one-sided, and there is tenderness to pressure over the exit of the supraorbital nerve and the lower anterior wall of the sinus. Often in chronic frontal sinusitis when unrecognized, the neuralgia may last for years with variable periods of freedom from pain, the condition usually being considered as one of simple supraorbital neuralgia. Infrequently the pain is in the occipital region, and then mistakes in diagnosis are still more apt to occur. The relation of the supraorbital nerve to the frontal sinus explains the frequency of neuralgia here, as its branches ramify over the anterior and inferior walls and the inflammation of the mucous lining involves the nerve trunk, while, when the sinuses are small, so that retained secretions are under pressure, it can readily be understood that neuralgia must be frequent.

ETHMOIDAL SINUSITIS AND NEURALGIA.

More often productive of headache, empyema of the ethmoid cells may be the exciting factor in occipital and frontal neuralgia, as the following case demonstrates:

Case 4.—Miss G., aged 20, had ethmoid suppuration on both sides, with enlargement of the middle turbinates and pressure against the septum. In addition to almost constant headache, attacks of occipital neuralgia occurred every week or so and incapacitated her for work, while frontal neuralgia was less frequent but unusually severe.

Since removing the middle turbinates in part and curetting the necrosed ethmoid cells for an irregular period of over two years, no neuralgia has been present for three years, although a mucopurulent discharge is at times annoying.

Unrecognized ethmoid disease, with or without neuralgia, is usually treated as postnasal catarrh, or, when neuralgia is severe and frequent, it is often treated as the sole disease and not as a symptom of the causal affection. Supraorbital, occipital and basal neuralgia occur in many cases of ethmoid empyema in which pus is confined under pressure in the various cells of this region, while in open ethmoiditis without obstruction, pain is usually not complained of, or at the most headache may be present to some extent. While it is suggested that empyema of the middle and anterior group of cells produces facial and vertex neuralgia, and that of the posterior cells vertical and occipital pain, yet in the majority of cases this is far from the fact, as it may involve the root of the nose, the lower inner angle of the orbit, the frontal region and the upper part of the cheek, but as a rule the localization of neuralgia from ethmoiditis is vague and in no way characteristic. The basal type of headache or neuralgia should suggest an examination of these sinuses, for in some cases the pain is on a plane with the base of the skull, involving the back of the eyes, the mastoid and temporal regions and the occiput along the same level. In other cases, infrequently observed, there may be a point of tenderness externally between the nasal bone and the lateral cartilage, where the anterior ethmoidal nerve sends an external branch to the skin covering this region.

SPHENOIDAL SINUSITIS AND NEURALGIA.

The least recognized of all these affections are those of the sphenoid sinus, and while empyema here is accompanied with headache more frequently than with neuralgia, yet the latter may occur, as shown by the following case:

Case 5.—Mrs. M., aged 55, has had a postnasal discharge for twenty years and once or twice a month intense neuralgic pains over the entire head, originating from a center situated at the intersection of two lines, one horizontal from the base of the nose, the other vertical from the top of the head. Five years ago the anterior wall of the sphenoid sinus was opened and since then the discharge has materially lessened, while the neuralgia occurs about once in two months, the attacks being as severe as before.

When I first saw her the trouble seemed to be entirely in the sphenoidal sinus and the opening had become obstructed so that retention of secretion caused the neuralgic attacks, while so long as the discharge was small in amount and there was no obstruction to its exit she was free from neuralgia.

In acute sphenoidal sinusitis, neuralgia may involve the frontal and occipital regions and produce intense agony, the pain also being complained of deep in the center of the head. In chronic empyema, however, while the pain may not be so severe, in some instances much suffering may be produced. Its location varies, but not infrequently the eyes are painful, the supraorbital nerve is involved or the pain may be over the vertex.

COMBINED SINUSITIS AND NEURALGIA.

The last case which I desire to mention illustrates a frequent condition, in which there is combined sinusitis and marked intranasal changes:

Case 6.—Miss R., aged 22, complained of a profuse mucopurulent nasal discharge and basal neuralgia, especially severe over the supraorbital regions. When the neuralgia was not present there was a dull headache. The middle and lower turbinates on both sides were swollen and jammed against the septum, while the ethmoid, sphenoid and frontal sinuses were involved, no evidence of antral disease being obtained. As the result of several months of treatment, the headache entirely ceased when the obstruction and pressure had been removed; the supraorbital neuralgia also disappeared and the attacks of basal neuralgia diminished both in frequency and severity. The ethmoid sinusitis which has not entirely disappeared under treatment causes occasional attacks of pain.

The neuralgia observed in such instances is bizarre and exceedingly confusing, and one can never be certain of its relation to any particular changes in the nasal chambers or sinuses until the affected parts have been approximately restored to normal, the retained secretions evacuated and pressure between opposing points has been removed. When during acute coryza or grippe, especially, the location of the neuralgia apparently bears some relation to a particular sinus, one may take it, with many exceptions, however, as an indicator of involvement of that cavity, but on this alone the diagnosis of sinusitis can never be made with certainty, nor can the relation of cause and effect be disclosed without more certain corroborative evidence.

In frontal or sphenoidal sinusitis, persistent occipital neuralgia may be a marked feature, or in either of these, with pathologic alterations of the ethmoid cells, neuralgia localized in the supraorbital or infraorbital regions, with marked tenderness of the orbit, is not infrequent. It must also be borne in mind that in many cases of neuralgia in which there is intranasal or sinus disease it does not follow that the former is dependent on the latter, for no relations at all may exist between the two, but the neuralgia is the result of other causes, the nasal affection being a mere coincidence.

3554 North Broad Street.

Tuberculosis and Nephritis.—Chauffard has noted nephritis in about 9 per cent. of his tuberculous patients. The kidney may be in an amyloid condition or hematuria, albuminuria and casts may indicate acute nephritis. In his study of the subject, published in the *Jour. de Méd. et de Chir. Prat.*, for Nov. 10, 1905, he mentions that in one case the symptoms of nephritis first appeared under tuberculin treatment. Albuminuria followed each injection.

CEREBRAL DECOMPRESSION.

PALLIATIVE OPERATIONS IN THE TREATMENT OF TUMORS OF THE BRAIN, BASED ON THE OBSERVATION OF FOURTEEN CASES.

WILLIAM G. SPILLER, M.D.
Professor of Neuropathology and Associate Professor of Neurology in the University of Pennsylvania.
AND
CHARLES H. FRAZIER, M.D.
Professor of Clinical Surgery in the University of Pennsylvania.
PHILADELPHIA.

(Continued from page 683.)

WHEN PALLIATIVE OPERATIONS ARE ADVISABLE.

After a careful study of these cases and of the views of the different authors, it will be seen that the weight of opinion is decidedly in favor of palliative operations. The choked disc, headache, vertigo, nausea, vomiting and, to some extent, the convulsions are all favorably influenced by this method of treatment. Relief from these distressing symptoms is by no means to be despised, even though the tumor is not removable. The relief from many of these symptoms is often permanent, i. e., during the period the patient may continue to live, and, as the growth of the tumor is not hastened by the palliative operation and may be slow, we are thankful for a means of removing the distressing symptoms of intense intracranial pressure.

My first case of palliative operation was in 1898, and the operation was performed by Dr. John B. Roberts. The marked improvement that occurred in that case and persisted at least during several years and until the patient passed from our observation convinced me of the benefit to be derived from palliative operations (Case 2 of our series).

In one of our cases (Case 10) headache was so severe that relief was demanded at once. Byrom Bramwell, as already mentioned, has attributed sudden death in some cases of brain tumor to the severity of the headache and sudden inhibition of the action of the heart. The patient to whom I refer suffered such intense pain that he could not be reasoned with and was not responsible for his acts. Occasionally, in his attacks of pain, he grabbed any one who might come within his reach and once bit his mother through the arm. The relief afforded in this case by a palliative operation has been most striking. Indeed, his relief from the previously constant pain has been so great that, as he expresses it, he is "lonesome without his headache."

In another case (Case 11) headache has been the symptom that above all others demanded treatment, and the pain in the head was associated with pain in the neck, shooting down into the upper limbs. The symptom-complex has been in large degree that of cerebellar tumor, but the pain shooting into the upper limbs has made me fear that the tumor was extending downward through the foramen magnum on the cord. Some years ago I had a case of this kind, and at the necropsy a flat tumor was found covering a part of the pons, extending into the posterior part of the fourth ventricle and growing down on the cord for several inches. In that case the development of the symptoms in the upper and lower limbs was more rapid than in the present instance, and, therefore, I feel that the tumor in the latter case may be confined to the region of the cerebellum. If so, I have no explanation for the pain in the upper limbs. The decrease of this pain, together with the decrease of the headache after the dura was opened at the second operation, gives me reason to believe that probably this pain of the limbs was indirectly caused by the cerebellar tumor. Headache and pain still occur occasionally, but the condition of the patient has been vastly improved by the removal of a piece of bone and by opening the dura over the cerebellum.

I am somewhat skeptical as regards disappearance of Jacksonian convulsions after merely opening the skull and dura if the convulsions are very frequent.

In one of my cases in which the brain was exposed by Dr. Edward Martin, and which will be reported by Dr. Martin and myself later, the tumor could not be found at the time of operation. The man was having five or six Jacksonian convulsions within an hour, and relief of intracranial pressure did not in any way check them. He died from exhaustion following the numerous convulsive seizures on the second day after the operation. After death a minute tumor was found nearly in the center of the area exposed, but a little subcortical.

In a still more recent case under my care, in which fracture of the skull and subdural hemorrhage had occurred, trephining probably prolonged life about 24 hours, but did not in any way check the Jacksonian convulsions which before the operation were as frequent as six or seven within an hour, and continued in weakened intensity but with equal frequency after the operation. Opening the skull does not seem to relieve acute irritation of the brain, but it is of benefit in chronic cases, as not rarely convulsions occurring infrequently have been rendered less severe by this procedure.

I have considered whether palliative operations can obscure focal symptoms. Bruns thinks they can not, but the subject is one that has important bearings. It is probable that a small tumor will cause more local disturbance if the general intracranial pressure is increased, not only because the local disturbance is added to the general pressure, but also because any one part of the brain is more irritable when the disturbance of the brain is general. This, however, is not sufficiently important to prevent palliative operation, and I would advise that this should be done before the general symptoms become very intense, and especially before optic neuritis has developed so far that blindness is likely to result. The apparent unanimity of opinion as regards the effect on choked discs of opening the skull makes the necessity of this operation at an early period very evident.

It is a mistake to regard palliative operations as a substitute for radical operations. The tumor should be removed whenever this is possible, and palliative measures are to be considered only when the tumor can not be located, or is too large for removal, or possibly is a glioma. Palliative operations only relieve, except in extraordinary cases such as those reported by Horsley. Codman's views that palliative operations are preferable to radical operations I can not share, and would add that the argument he offers is insufficient, viz., that the former are less dangerous in the hands of inexperienced surgeons. No surgeon who has had little experience in operating on the brain should attempt the removal of a brain tumor, and before advising the attempted removal of a brain tumor I always inquire who is to perform the operation.

The experience of Horsley as regards atrophy of tumors as a result of palliative operations seems to be unique; at least I have found no other similar cases, nor have I ever seen any such result in any of our cases. Broca and Maubrac doubted whether Horsley was correct in believing that partial ablation of a tumor may retard the growth of the rest, but Horsley has observed atrophy of a tumor following a simple opening of the skull and dura. This is a striking statement. I have never seen arrest in the growth of a tumor following the removal of a part, but several times I have seen increase of symptoms result, and I dread the partial removal of a growth, especially if it is a glioma. It has seemed to me that the congestion of the tumor and of the surrounding tissue and the greater space afforded for the growth of the tumor, after partial removal, favor the rapid growth of the remaining portion. I am almost convinced that it is better to leave a tumor untouched if only a part can be removed, especially if the growth is a glioma. The attempt, I think, should never be made to remove a glioma, and yet there seems to be no way to determine before operation that the tumor is a glioma. A patient has been under our care with the diagnosis of brain tumor and was operated on several times by Dr. Frazier. Each time as much of the tumor as could be seen was removed, and yet a return of the symptoms occurred soon after each operation, and when a necropsy was obtained the tumor (a glioma) was found to extend from the upper to the lower surface of one cerebral hemisphere.

I doubt whether it can be held that a palliative operation, by which the tumor is not partially removed, by relieving pressure, favors the growth of an intracranial tumor. Unquestionably the brain has protruded through the opening, as in the cases of Schlesinger, Frazier, and Cushing, but it seems a questionable proceeding to excise the protruding portion. The tumor has grown through the opening and on the outside of the skull (Jolly, Wiener, Putnam and others). In Jolly's case it formed an extracranial mass nearly as large as the man's head. It seems unquestionable that life was prolonged in this case by the operation, although it is doubtful if life under such circumstances is worth having. In Jolly's[33] case the clinical signs extended over a period of thirteen years. In the case that Dr. Martin and I observed, to which reference has been made, the symptoms of brain tumor had existed for eight years.

We have had some extraordinary cases in which the symptoms of brain tumor disappeared entirely or almost entirely after an opening had been made in the skull and dura. Such, for example, are the case observed by Dr. John B. Roberts and myself in 1898 and Cases 4, 5, 6, 9, 10 of our series. It may be thought that the growth of the tumor is arrested by the operation; this is possible, but doubtful. Internal hydrocephalus (meningitis serosa) or some other lesion may give the symptoms of brain tumor, and relief of intracranial pressure may cause great modification or disappearance of the symptoms. In some cases in which relief has followed palliative operations probably an incorrect diagnosis has been made; in others, the relief of pressure has permitted the tumor to grow slowly without causing many symptoms.

My views as a result of my experience and of a study of the literature are:

1. Palliative operations should be performed early in every case in which symptoms of brain tumor are pronounced and before optic neuritis has advanced far, especially where syphilis is improbable, or antisyphilitic treatment has been employed.

2. Partial removal of a tumor, especially of a glioma, is a questionable procedure.

3. Palliative operation does not cause atrophy of a brain tumor and probably does not arrest its growth; on the other hand, it probably does not hasten its growth.

4. Palliative operation is not to take the place of a radical operation when the latter can be performed without great risk to the patient.

5. In some cases the symptoms of brain tumor disappear almost entirely for a long time or permanently after a palliative operation. This result is obtained either by relief of intracranial pressure or by removal of some lesion (meningitis serosa, etc.) other than brain tumor, and yet causing the symptoms of tumor.

REMARKS BY DR. FRAZIER.

The question as to whether a palliative or radical operation is indicated may be determined by answering the question as to whether the tumor is operable or not. The operability of brain tumors has frequently been discussed and the facts and figures which have been presented to us have been based almost exclusively on the autopsy records and not on the finding at the time the operation was performed. The autopsy records may help to determine the percentage of operable tumors in so far as it reveals the nature of the tumor and may be able to fix on its point of origin. The very vascular infiltrating sarcomata should be classed with the inoperable tumors, for I believe the expectation of life and the enjoyment of that much of life which remains to the patient would be greater in the majority of cases after a palliative operation. On the other hand, the fibroma, or the somewhat defined fibrosarcoma and the gumma of limited dimensions should be classified as of the operable group. The size of the tumor as revealed at the autopsy has no practical bearing at all on the problem; the size of the tumor at the time the symptoms first made a diagnosis possible should only be considered. There are some tumors of such large proportion as to make any attempt at removal inadvisable, but, on the other hand, tumors of very small dimensions may lead to a fatal termination.

If it were possible to ascertain the point from which the tumor took its origin we should have some valuable statistics as to the operability of tumors. The farther away the tumor is from the cortex or the nearer it is to the base of the brain the more it approaches the field of inoperable growths. If the statistics are to be of much value to the surgeon they should be based on the records which are made on the operating table or at the autopsy, if the patient dies as a result of operation, only in those cases in which the patient has been brought to the surgeon comparatively early in the course of the disease. One might as well prepare a table and compile statistics as to the operability of carcinoma of the stomach based on the autopsy records of patients who died in the most advanced stages of the disease, when the lymphatic nodes far beyond the primary lesion have been invaded and the tumor is no longer confined to the stomach, but has invaded other organs adjacent to it. The question as to what percentage of tumors of the stomach may be removed must be and is being determined in the very earliest stages and on the operating table. So with tumors of the brain, the greater the number of cases brought to the surgeon in the earliest recognizable stage of the disease the sooner will we be able to say with some degree of accuracy in what percentage of cases there is a reasonable hope of being able to perform a radical operation.

There are two classes of cases in which a decompressive operation may be required. One in which there is reason to believe the tumor can not be removed in its entirety and the other in which the tumor can not be localized and yet the possible loss of vision, the intense headache and distressing vomiting almost demand the immediate adoption of some measure of relief. Cases of tumors of the cerebrum in which localization is impossible are rather the exception, although in cerebellar lesions it not infrequently happens that the tumor can not be localized.

---

[33] Jolly: Berl. klin. Wochft., July 17, 1899, p. 636.

A word or two might be said with reference to operations performed for the relief of cerebellar tumors. The anatomic relations of the structure in the suboccipital resemble in certain particulars those in the temporal region. In both the bone is covered with a well-developed musculo-aponeurotic layer, even of a greater bulk in the suboccipital than in the temporal region. For purposes of exploration it is necessary to reflect a flap of considerable size, the incision beginning at the mastoid process and, following the line of the transverse sinus to the occipital protuberance, drops in a vertical direction along the median line. And when the flap is replaced great pains should be taken to approximate carefully not only the cutaneous, but the musculo-aponeurotic layer. When the tumor can not be localized or for any other reason a radical operation is not deemed feasible a less mutilating incision will answer the purpose quite as well. A vertical incision should be made, beginning a little above the superior curved line and extending downward for a distance of three or four inches. The edges of the wound can be retracted sufficiently to afford space necessary to carry on the subsequent steps of the operation. A much more perfect approximation of the wound may be obtained as the muscles are split in the direction of their fibers and not in various angles, as is the case when a curved incision is made following the line of the sinus. This vertical incision enables one to remove the bone only from one side, but, if, for any reason, a bilateral craniectomy seems advisable, the muscle-splitting operation may be repeated on the opposite side. Such a procedure has many advantages over the conventional bilateral craniectomy in which the bone from one mastoid process to the other is removed. There is less chance of disturbance arising from traction on the pons or medulla if an intervening bridge of bone is left. In addition to this the bone in the region of the occipital region is very vascular, often riddled with vascular channels of such dimensions as to admit of a very profuse and sometimes alarming hemorrhage. The region immediately surrounding the occipital protuberance should be regarded as the dangerous zone and as such scrupulously avoided.

Failing to find the tumor, we have in certain cerebellar cases deliberately removed from one-quarter to one-third of the cerebellar hemisphere and have attributed the relief of pressure, in part at least, to this. In all our cases the operation has been confined to one side, and as yet we have not found it necessary to operate a second time for the removal of the bone on the opposite side. Even if it were conceded to be necessary to remove eventually the bone overlying both hemispheres, the operation had better be performed in two stages rather than in one; patients with cerebellar lesions are at the best not very favorable subjects for operative intervention, and preference should be given, therefore, to this procedure, which in giving the desired results will require less time and be attended with less hemorrhage and traumatism of the tissues.

First, as to those cases in which the tumor can not be localized. There are two points in the technic of the operation about which there may be some difference of opinion, namely, the area of the brain to be uncovered and the incision of the dura. The decompressive operation consists solely in the removal of a portion of the cranial vault, with or without incisions into or removal of a portion of the dura. When there is no guide as to the situation of the tumor, the operator is free to select either one of four areas: the frontal, parietal, occipital or temporal. In discussing this question several years ago, attention was called to the desirability for cosmetic reasons of avoiding both the frontal and occipital regions; there remain, therefore, but two areas from which to make the election: the parietal and the temporal. It is desirable, as Sänger suggests, to give preference to that portion of the skull beneath which may be said to exist a *silent area of the brain. This is especially* true of the right temporal region, so that, in the absence of any contraindication, this may be said to be the region of choice. Through a longitudinal incision, following the direction of the fibers of the temporal muscle, a section of bone equivalent to 6 or 8 square centimeters may be removed. One should be content to make but one opening, at least at the first sitting. This will be found in most cases to be sufficient to afford the necessary relief of pressure. If in the course of events there is evidence of a recurrence of increased tension, as shown by such symptoms as headache, vomiting or choked disc, a second opening may be made on the opposite side of the head. Such were the circumstances in one of our patients (Case 5). The headache, which had been relieved temporarily, recurred. A second opening was made on the opposite side of the head, and since that time, a period of about three years, the patient has enjoyed almost entire relief.

Speaking now only of those cases in which the tumor has been definitely localized, it is impossible to determine prior to the operation whether the tumor is one appropriate for a radical rather than a palliative operation. The duration of the disease is a guide neither to the size nor to the nature of the tumor. Malignant tumors in the brain are, many of them, surprisingly slow in their growth, and, though of many months' or years' duration, may still be in the operable stage. A very large tumor may be present with comparatively slight disturbance, or a very small one may be very serious in its consequences. A tumor of several years' duration may be no larger than a hickory nut or walnut, and yet give rise to a condition which may ultimately prove fatal.

Recently I was called by Dr. Charles K. Mills to operate on a patient who had had symptoms of a tumor for more than a year. The localizing symptoms were very vague, but all seemed to point to a lesion of the left cerebellar hemisphere. This was thoroughly explored, but with negative results, except in so far that there seemed to be a very unusual degree of tension within the cerebellar fossa. This was so suggestive of the presence of a tumor as to justify a very careful search. The results were negative. About two weeks later the patient died, and a tumor as large as a peach was found compressing the under part of the occipital lobe directly in contact with the tentorium cerebelli. Its position satisfactorily explained the existence of cerebellar symptoms. As the brain was being lifted out of the cranium at the autopsy the tumor dropped on the table. Though of large dimensions, it was clearly an operable one, and had the symptoms made it possible to localize the growth it could have been removed without any difficulty, and owing to its benign nature the operation would have resulted in a complete cure. In such a case had the operator proceeded deliberately to the performance of a decompressive operation and not attempted to explore the affected area the opportunity of saving the patient's life and of affording him permanent relief would have been thrown away.

In every instance, therefore, the operator should begin the operation with the intention, first, of attempting to expose the tumor. He should proceed as for the performance of an osteoplastic operation; the flap should be carefully mapped out and reflected and the usual exploratory measures adopted. Failing to find the growth or finding an inoperable one, the propriety of a decompressive operation is clearly indicated. He must then determine as to whether he will remove the bone of the flap, wherever this may be, or close the flap and remove the bone from the area of choice, namely, over the right temporal lobe. When, as is true in the majority of cases, the tumor is situated in the postfrontal (motor) or parietal region the bone over the temporal region may be removed through the same opening, thus avoiding the necessity of another incision. This was the procedure adopted in one of our reported cases. The patient was suffering so intensely from headache that he was operated on the day of his admission to the hospital; not waiting to make a more careful study of the case with a view toward accurately localizing the growth we proceeded at once with the intention of performing a decompressive operation. Sufficient was known of the case to lead us to believe the tumor was in the motor region. Accordingly this was laid bare and a very large vascular tumor, probably a sarcoma, was at once exposed. Deeming it to be inoperable and wishing to afford relief from the intracranial tension, only the lower half of the bone contained in the flap, which extended down to the Sylvian fissure, was removed, but through the same opening a considerable portion of the bone lying below the fissure and under the temporal muscle was also removed with Rongeur forceps. As will be seen in the record (Case 10) the headache was immediately relieved. The most important question, however, in the technic of the decompressive operation is as to whether the dura shall be incised or removed. The region from which the bone is to be removed is by comparison a matter of slight importance. To be able to answer this question one must be in a position to state from experience, first, whether the escape of cerebrospinal fluid through a dural opening is essential, and secondly, whether sufficient relief of tension may be afforded with the dura intact. As to the escape of cerebrospinal fluid there are certain observers, notably v. Bergmann, who believe that the beneficial effect of this operation is largely attributable to the escape of cerebrospinal fluid. It might be difficult, possibly, to prove or disprove this idea on theoretical grounds, but from our own experience we have not been able to note any radical difference in the results between those cases in which the dura was either left intact or if incised for exploration, was closed immediately afterwards. To the escape of a small quantity of cerebrospinal fluid through a temporary opening in the dura could scarcely be attributed the relief, which extends over a period of months or years. In so far, therefore, as the results of the operation are concerned, it makes no difference whether the opportunity for drainage was afforded by a permanent opening in the dura. In the most satisfactory of the cases under our care the dura was closed in one case, particularly, in which an exploratory dural incision was not entirely closed, the patien enjoyed no appreciable benefits from the operation.

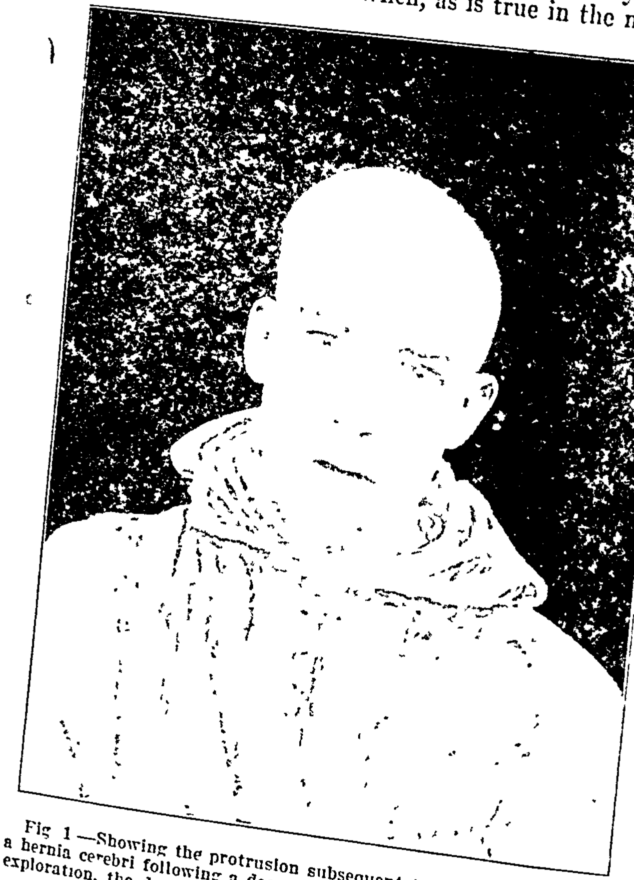


Fig 1.—Showing the protrusion subsequent to the development of a hernia cerebri following a decompressive operation, in which, after exploration, the dural wound was closed (Case 10).

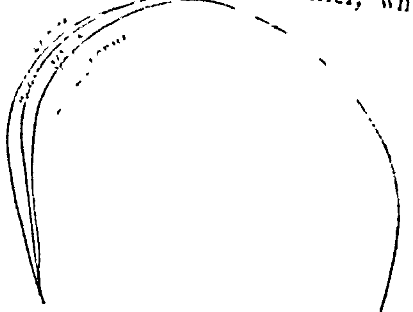


Fig. 2.—Showing the rapid development of a hernia cerebri in the decompressive operation. After the operation the dural wound was closed. The dotted line represents the normal contour on the affected side. The other lines represent the contour of the head: (1) March 30, 1906, one week after the operation, (2) April 4, 1906, twelve days after the operation, (3) April 30, 1906, five weeks after the operation (Case 10).

I think it is very generally believed (by those who have had but little experience with these operations) that the success of the operation depends on the establishment of an opening in the dura as well as in the skull. It is said that the dura is not elastic enough to stretch sufficiently when subjected to pressure. That the dura will stretch, when the overlying bone is removed sufficiently to afford adequate relief of tension, has been demonstrated in our cases over and over again. Take for example, a case which was operated on for a tumor believed to be in the occipital region. The tumor was not to be seen on or near the cortex, but there was a very much dilated right ventricle, possibly due to a tumor at the base, cutting off the intraventricular communication. If we turn to the illustration (Fig. 1), we see a genuine hernia cerebri, a hernia in which the dura as well as the scalp form the coverings. This patient has been under observation for a number of years and for the past year the hernia has not increased in size. The optic neuritis was in this case too far advanced to enable us to save the patient's vision; in other respects the patient enjoys excellent health and is now in attendance at an educational institution. A decompressive operation was not a matter of choice in this case, at least at the outset this was not contemplated. The brain bulged so through the opening that it was impossible to close the flap without removing the bone.

As an example of how rapidly the dura may stretch when subjected to excessive pressure, one of the cases of our series may be cited in which an exploratory craniotomy revealed a large and very vascular ill defined sarcoma. Its removal was out of the question, the incision in the dura was closed and a section of bone removed. Several records were made of the convexity of the head (Fig. 2) at short intervals and it is rather surprising to find how rapidly the dura had expanded to accommodate the growth. On the other hand in another case in which a tumor was exposed and found inoperable the dural incision was only partially closed. The results in this case were as compared with the other, in so far as the relief of symptoms was concerned, much less satisfactory.

Whatever else may be said either in favor of or against the removal of the dura it should be borne in mind that if the dura is removed and any complication arises in the repair of the wound it is more than likely that a fungus cerebri will develop. An accidental wound infection, the persistence of a sinus, the remains of a drainage tract may result in infection of the exposed brain tissue and that very fatal condition, a fungus cerebri. In the hands of operators, experienced in this field of surgery the danger is very slight, but it is questionable whether the removal of the dura should be resorted to as a universal practice. While in a given number of cases the results may not be so pronounced the mortality will be higher unquestionably if the dura is removed in every case. Inasmuch as the brain may herniate through the opening in the skull when the dura is left intact, there is really no necessity for removing more than the overlying bone. If the dura is disturbed at all the operator should be content with making a crucial or radiating incision in it, and in many cases it may be advisable to reserve this step of the operation until indications arise for further intervention. This course was pursued in one of our cerebellar cases in which temporary relief having been afforded the symptoms, particularly pain, recurred. A muscle-splitting incision was made, the edges of the wound retracted and a crucial incision made in the dura. The results were very gratifying and have continued so now for a period of several months.

Mortality.—Every one of the twelve patients operated on at the University Hospital, eleven by Dr. Frazier and one by Dr. Martin, recovered. The absence of any fatalities in the entire series is worthy of note. When one is debating, as to the advisability in a given case of performing a radical or palliative operation, consideration should be given to the fact that there is at least no immediate risk as to life from the decompressive operation. In the palliative measure we have an operation, which almost inevitably relieves the sources of discomfort and suffering, not only without endangering but frequently prolonging life: in the radical measure we are undertaking an operation, which has a comparatively high mortality and is only successful in a small percentage of cases in finding and removing the tumor.

Results.—The opinions expressed in the paper are based on observations in a series of fourteen cases. The first operation was performed in 1898 and the last, March 20, 1906. In but one of the entire series did the operation fail to afford the relief which would justify its performance. There was in this case some immediate improvement, but so slight as not to warrant the promise of relief which was held out to the physician and relatives of the patient. The operation was performed in March of this year, the patient was at the time almost comatose and her life was in immediate danger. At the present writing, May 25, 1906, her physician, Dr. Thomas O. Nock, writes me that the patient has been moved to the country, but her condition is little, if any, improved. All that can be said of this case is that life has been prolonged. The results in this case are a striking contrast to those following an operation performed in October, 1903. This patient probably has two lesions, one in the parietal lobe and one in the cerebellum, and before the operation suffered intensely from headache and neuralgia. When last heard from two and a half years after the operation she still enjoyed absolute relief. Perhaps the most brilliant of the series was a patient who presented the clinical symptoms of a cerebellar lesion, intense choked disc, frightful headaches, and persistent nausea, vomiting and ataxia. This patient (Case 4) was operated on two and one-half years ago and when last seen, February of the present year, he was the picture of health and was engaged in hard manual labor. Neither headache nor nausea recurred, and though he had a choked disc, so elevated that he could scarcely recognize large objects, his vision is now practically normal. Apart from the fact that he occasionally has attacks of what he calls "dizzy spells" he is to all intents perfectly well and now weighs 184 pounds.

The decompressive operation offers to the patient relief from the three cardinal symptoms of cerebral tumor, headache, nausea and vomiting, restores vision, and, if the lesion is in the cerebellar fossa, relieves ataxia and vertigo. Mention has already been made of the dangers of postponing operation once there are signs of choked disc. One of the strongest arguments in favor of the palliative operation is the opportunity to save or restore the patient's eyesight. Without exception the choked discs subsided in every instance, but unfortunately in at least three of our cases the patients remained totally and hopelessly blind because the optic neuritis was of so long duration that the nerve had undergone atrophy. The subsidence of the choked disc takes place as rapidly when the dura is left intact as when it was incised. The case, which in Dr. de Schweinitz's opinion and experience, responded most promptly to the operation was one in which the dura was not disturbed. Although the operation was performed only seven months ago the patient's vision has continued to improve. The prospects of preserving the eyesight alone would justify the operation, but no less so the opportunity of relieving headache. Our results with respect to headache have been uniformly good. There were two or three cases in which the headaches did not entirely cease, but in these there were intervals of relief and the headaches were less severe. As to the duration of the period of relief the longest in our series is between two and one-half and three years. In at least three of our cases the intensity of the pain seemed to be as great as that of a tic douloureux, and one patient had become addicted to the liberal use of morphin; yet in each one of these the relief was immediate, absolute, and permanent. In one instance the suffering was so intense that the operation was performed within a few hours of the patient's admission to the hospital, before an opportunity was afforded to determine with any degree of accuracy the location of the tumor. What has been said of the beneficial effect of the operation on the choked disc, even when the dura was left intact, may be repeated in dealing with headache. Not that the dura was not opened in some cases for exploration, but in almost every instance the dural wound was immediately closed with sutures.

Mention might be made of the fact that in two instances Nature had already begun to relieve the intracranial tension. In these cases the tumor had grown through the dura and in one instance had almost perforated the skull. In conclusion we may say that there is no form of treatment, either medical or surgical, which, in the presence of an incurable lesion, causing sometimes great discomfort, sometimes intense suffering, so uniformly affords so great and enduring a measure of relief.

SUMMARY OF CASES.*

	LOCATION OF LESION.	PERIOD SINCE OPERATION.	RESULTS
1. L....	Cerebrum....	1 year (operation was not performed but relief of pressure occurred spontaneously).	Alive and free from pain.
2. B......	Cerebellum...	7 years.......	Almost complete recovery during 2 or 3 years—present condition unknown.
3. G......	Cerebellum and Cerebrum.	2 years and 7 mo.	Alive and free from pain.
4. E....	Cerebellum..	2½ years.....	Alive and free from pain.
5. D......	Cerebellum..	2½ years.....	Alive and free from pain.
6. B......	Cerebrum...	1 year and 7 mo..	Alive and free from pain.
7. M......	Cerebellum...	8 months......	Second operation was performed, tumor found and removed.
8. K......	Cerebellum....	7 months.....	Died 7 months after operation.
9. L......	Cerebellum....	7 months.....	Alive and free from pain.
10. S......	Cerebrum....	2½ months....	Alive and free from pain.
11. F......	Cerebellum...	2½ months....	Alive and free from pain.
12. D....	Cerebellum...	2 months.....	Radical operation was p-rformed 2 months after palliative operation.
13. C.....	Cerebrum...	....	Alive but little if any relieved.
14. S......	Cerebellum...	About 3 years...	Improved—death from tumor about 3 years after palliative operation.

* A case under the care of Drs. Spiller and Martin to which reference is made in this paper, is not included in this table.

ORIGINAL OBSERVATIONS.

CASE 1.—Probably tumor of motor area. The following case is of great interest as it seems to be one in which relief of symptoms from intracranial pressure occurred by escape of cerebrospinal fluid through the cribriform plate of the ethmoid bone without operation, and it may be, therefore, regarded as a case in which relief was afforded in a manner similar to that in palliative operations.

Examination.—L. was seen by Dr. Spiller in consultation with Dr. Ernest Laplace, Aug. 13, 1904, at which time the following notes were taken: In showing the teeth the left corner of the mouth is drawn up better than the right. When drawing up each corner of the mouth separately he draws up the left better than the right. The eyelids are closed equally well on the two sides, and the resistance to any attempt to passively open the lids is as good on one side as on the other. Percussion of the scalp shows no area of tenderness. When the tongue is protruded it tends to deviate a very little towards the right. The movements of the tongue are free in all directions, and the tongue is not atrophied. The movements of the eyeballs seem to be normal in all directions, except that the movement to the left may be a trifle impaired. There is no nystagmus. The reaction of the iris to light is preserved but tardy on both sides. Convergence and accommodation can not be tested satisfactorily on account of the mental condition. The pupils are equal and regular. The masseter muscle contracts well on each side, but the left masseter contracts a little better than the right when the patient bites. He says that he feels touch more distinctly on the left side of his face. Pin prick is probably perceived in the right side of face as well as in the left, but his statements regarding sensation are not to be relied on. He understands what is said to him, although he appears dazed and has difficulty in replying, but apparently is not aphasic.

Upper limbs: The grasp of the right hand is distinctly impaired and is decidedly weaker than that of the left hand. The upper limbs are well developed and equally so. The biceps and triceps tendon reflexes on the right side are distinctly prompter than the corresponding reflexes on the left side. After a spasm the right upper and right lower limbs seemed to be almost completely paralyzed, and Dr. Laplace says that this paralysis following a spasm is only temporary.

Lower limbs: The lower limbs are well developed and there is no atrophy in any part. The patellar reflex is about normal on the left side, but exaggerated on the right side. There is no ankle clonus on either side. The Achilles tendon reflex is about normal on each side, and a trifle prompter on the right than on the left. The Babinski reflex is very pronounced on the right side; the big toe as well as the adjoining toe being drawn distinctly. The Babinski reflex is not present on the left side, the movement being flexion.

During the examination an epileptic attack occurred. It began with slight flexion of the right forearm on the arm. This movement lasted from thirty to sixty seconds before the face was involved. The right lower limb seemed to be involved before the face. Clonic movements of small extension began in the right lower limb, afterwards the movements occurred in the right upper limb. Both right upper and lower limbs were very spastic. The right side of the face was thrown into violent tonic spasm, and the lids on both sides were equally affected. There seemed to be a slight tendency of the eyeballs to turn to the right, but this was not pronounced. The lower part of the left side of the face, the left upper and lower limbs showed no convulsive movements and the left limbs were not spastic. Consciousness did not seem to be lost during the attack. Urine was not voided during the attack, but was immediately after the attack, voluntarily. After the attack the man was drowsy and passed into a light sleep lasting about five minutes.

Further Examination.—A further examination on August 14, gave the following results: Sensation for touch is more acute on the left side of the face; sensation for pain is more acute on the right side of the face; this agrees with the findings of yesterday. The grasp of the right hand is not so good as it was at the beginning of the examination yesterday. A knife or a pencil put into the right hand is distinguished without difficulty when the eyes are closed. The weakness of the right upper limb has been much greater since the attack that we saw yesterday, than at any time previously. He can barely lift the right hand from the bed. The paralysis of the right lower limbs which developed after the attack that we saw yesterday disappeared in part during the afternoon, whereas that of the right upper limb has persisted with very little change. The sensation for touch and pain seems to be more acute in the right lower limb than in the left. He seems to understand what is said to him, but has difficulty in getting words to reply and is partly motor aphasic. He yawns repeatedly, and Dr. Borsch has noticed that during the convulsive attack the eyeballs are drawn toward the right, but remain in this position only during a short part of the attack. The left pupil is larger than the right and the left recovers more slowly than the right.

Subsequent History.—The following notes were obtained from Dr. Laplace: The patient continued to improve under high doses of iodid of sodium (100 grains daily) until all symptoms of paralysis had disappeared. Headaches also disappeared, but the optic neuritis continued. The field of vision gradually lessened until total blindness ensued, January, 1905. The patient remained in this condition until May, when convulsions attended by severe headaches returned, exactly similar to those seen by Dr. Spiller in August. About forty convulsions took place in the course of the first week in May, 1905. He suffered with intense headaches and was suddenly greatly relieved of all headache and of nearly all the other symptoms on expectorating what seemed to be a certain amount of purulent material. [Dr. Laplace did not see the patient at the time of this nasal discharge]. Whether the material contained cerebrospinal fluid or whether it was pus which found its way into the nose, after burrowing its way through the cribriform plate of the ethmoid can, therefore, only be conjectured. In June and July the patient improved, but his lower extremities remained weak. This weakness of the lower extremities has increased gradually from July, 1905, until the present time. Mental hebetude gradually set in, but there has been an absolute freedom from headache, from July, 1905, until now.

Present Condition.—Complete blindness; perfect consciousness. He is thoroughly rational when aroused; otherwise quite listless. There is great weakness of lower extremities, requiring support to enable him to walk. Both arms are quite strong. Excellent appearance; good appetite and digestion; full control of bowels and bladder. Freedom from headache. Last report says that general weakness is gradually becoming more marked. Mercury and iodids have been continued. The patient and his family have opposed any surgical interference.

Case 2.—Tumor of cerebellum (?). Mrs. M. B., was admitted to the Polyclinic Hospital Dec. 31, 1898, under the care of Dr. Spiller and Dr. Robert[illegible]

History.—Patient had been married 26 years, a widow 18 years; had two children, [illegible] and 20 years old, respectively, at time of death. Emigrated to America five years ago. She had good health until previous to present trouble. Her present condition began two and one-half years ago with violent headaches in the left occipital region. Her symptoms have gradually increased in number and intensity, until at present they consist of very severe headaches in the left occipital region, great tenderness over the same region, extreme vertigo, especially when lying on the left side in bed or attempting to walk; very ataxic gait so that she staggers like a drunken person and falls to the left side or backwards.

Examination.—The patellar reflexes are absent; sensation in the legs is obtunded, and movements of the lower extremities somewhat restricted (she can not cross her legs). During the last few months she has been getting rapidly worse. A diagnosis of cerebellar tumor was made, and the patient was admitted to the wards of the Polyclinic Hospital for an exploratory operation. Urinary examination, color, amber, cloudy; reaction, acid; sp. gr. 1,020; no albumin or sugar.

Operation.—On June 4, 1899, under ether, the skull was opened by trephine and lion-jawed forceps, a hole about 1½ inches in diameter being made over the probable seat of the lesion as indicated above. The dura mater appeared normal, as did the bone removed; the dura mater was laid back, the brain exposed, the finger inserted and the surface of the brain palpated for an area of five inches or more in diameter, but no abnormality was detected. A puncture was then made into the convolutions of the brain in several directions with a grooved director to the depth of three-fourths inch without finding any lesion. The dura mater was then sutured, and the skin flap brought into place and secured. The patient made a good recovery from the anesthetic but her temperature began to rise rapidly that night, reaching 101° F. at [illegible] p. m. Infection being feared, the dressing was removed, the sutures partially withdrawn, and the wound flushed with normal salt solution. The wound was redressed at frequent intervals since, all the sutures removed.

Results.—June 30. The patient has been slowly improving since the 20th, the temperature having been practically normal. The parietal region on the operated side has almost entirely lost its peculiar tenderness to touch, and the headache occurs only occasionally, is slight and is now located in the frontal region. The patient made a complete surgical recovery, and almost all her symptoms disappeared. After two or three years she returned to Europe.

Case 3.—Tumor of the pons. Mrs. G., aged 45, was admitted to the University Hospital under the care of Dr. Charles K. Mills, October, 1903.

History.—Tumor of the pons, probably second lesion in the parietal lobe; cyst evacuated; permanent disappearance of severe headache and facial neuralgia. This patient, a woman about 45 years old, first came under the care of Dr. Mills in November, 1902. One year before coming under observation she had an attack of vertigo without unconsciousness and after this partial paralysis of the left third nerve was observed, ptosis, dilated pupil and paresis of the internal rectus being present, according to the physician then in attendance. From the history she also appeared to have had temporary paralysis of the left side of the face. She had subsequent similar attacks, some of these shortly before coming under observation. In one of the recent seizures she was found in the cellar, pacing up and down with her hands above her head, eyes dilated and apparently struggling against suffocation. She was taken upstairs and put to bed; she tried to speak, moving her jaws without uttering a sound; her face was pale, her eyes were open. At the time of the first examinations she had paresis of the left side of the face, partial ptosis, pupils equal and responsive, the superior rectus not being as active on the left side as on the right.[34]

Examination.—The patient was again examined by Dr. Mills and Dr. Spiller, Sept. 22, 1903. The left side of the face was paralyzed in the entire distribution of the seventh nerve. She complained of much pain, confined to the left side of the face and in the distribution of the fifth nerve. The masseter and temporal muscles contracted well in chewing on each side. No distinct objective disturbance of sensation on the left side of the face was made out. The left external rectus seemed to be the only external ocular muscle distinctly paretic. Astereognostic conception as tested in the right hand was almost complete.

She complained of much pain on both sides of the forehead, extending down the left side of the face to the lower border of the lower jaw. The pain did not extend below the median line of the lower jaw; it extended to the mastoid process, but not beyond this on the left side; it did not extend into the neck. She had constant pain in both temples, but it was greater in the left than in the right. All points of exit of the fifth nerve were painful to pressure; as much so on the right side as on the left. Sensation for touch and for pain on the two sides of the face seemed to be normal; she felt a touch or pin prick as well on the left side of the face as on the right. In such instances as when chewing a hard crust of bread, the left masseter contracted, but not so well as the right; in opening the mouth the lower jaw did not deviate distinctly. She complained of a sense of numbness in the left side of the face; this involved the entire distribution of the fifth nerve and extended on the left to the temple, but not far beyond the border of the hair. There was considerable improvement in the paralysis of the orbicularis palpebrarum. There was complete paralysis in the lower distribution of the left facial nerve. The right side of the face was normal. She did not have any nausea and seldom had spells of vertigo, although formerly the latter occurred frequently. She showed at times a tendency to fall backward or toward the left, but did not stagger as much as formerly; closing the eyelids did not affect the gait very distinctly. Hemiasynergia was not present on either side.

As the patient was slowly getting worse and was suffering extremely with pain in her head and face, it was finally decided to remove her to the University Hospital for the purpose of having an operation, which might at least be palliative.

---

[34] The case is fully reported as Case 6 in a paper by Dr. Charles K. Mills, on "The Diagnosis of Tumors of the Cerebellum and Cerebellopontile Angle, with Special Reference to Their Surgical Removal," New York and Phila. Med. Jour., Feb. 11 and 18, 1905.

Her pain increased until it became torturing, and for days before the operation it was necessary to keep her continuously under the effects of morphin or codein. No change of any moment occurred in her focal symptoms after the above recorded notes.

Operation.—The operation was performed by Dr. Frazier, Oct. 14, 1903, under ether anesthesia. A musculocutaneous flap together with the periosteum was reflected and an opening was made in the skull with the chisel and enlarged with Rongeur forceps. Nothing abnormal as regards pulsation nor consistency of the left lateral lobe of the cerebellum was noted. The dural flap was reflected; at one point this flap was adherent to the underlying brain. Cerebellar tissue bulged only moderately through the wound. On exploring with the index finger in the region of the cerebellopontile angle some adhesions were separated on the lateral aspect of the cerebellum. This was followed by a gush of fluid which had evidently been walled off by adhesions. After the evacuation of the cyst the bulging subsided immediately and with a brain retractor it was possible to inspect the region of the cerebellopontile angle and to demonstrate to those present at the operation, the fifth, seventh and eighth cranial nerves. It was noted on the blood pressure chart that when the dura was opened the blood pressure dropped thirty points and that on introducing gauze packing or on compressing the brain with the retractor that the blood pressure rose forty points. The patient's condition was not depressed to any considerable degree by the operation; on her return to bed the pulse was 145; respirations were 40, and blood pressure was 115.

The interesting feature of the case was the ease with which the cranial nerves were exposed after the cyst had been evacuated.

The patient reacted well after the operation and passed a fairly comfortable night. There was very profuse oozing of blood and cerebrospinal fluid, necessitating frequent reinforcement of dressing. The patient was much nauseated, vomiting curds of milk and bile-stained fluid. She complained of pain in her temples. An incomplete examination showed that sensation was present on both sides of the face and no inequality of pupils was noted. On October 15 the wound was dressed and found in good condition; the drainage was removed, there was a free flow of cerebrospinal fluid.

Subsequent History.—An examination by Dr. Mills and Dr. Spiller on October 15 resulted as follows: No cutaneous anesthesia was present on either side; not even any hypesthesia on the left. There was no great impairment of the motor division of the fifth nerve, the masseter and pterygoid muscles being tested. Complete paralysis in the muscles supplied by both the upper and lower branches of the seventh nerve was present. She was completely deaf in the left ear. Slight paralysis in the right upper extremity was noticed. Astereognosis or pseudoastereognosis was present in the right hand. Anesthesia for both touch and pain and hyperesthesia were absent. She had had no pain in the face or head since the operation and had required no anodynes.

October 19: The wound was again dressed and the stitches were removed; the wound was healed, with the exception of one angle; a small piece of gauze was inserted for drainage. The patient's general condition had been very good. Her pupils were normal.

October 24: The surgical condition was entirely satisfactory; the wound was healed, with the exception of one spot, which was rapidly granulating. The patient's general condition had rapidly improved since last noted. She was regaining strength, had been sitting up and was quite comfortable.

October 29: Patient was discharged, the surgical condition left nothing to be desired; the wound was completely healed; there was no bulging of the flap, no signs of inflammation or edema of the scalp. She had not had any pain in the head or ears; the only discomfort had been some irritation of the conjunctiva of the left eye, which was probably due to facial palsy.

Results.—When the patient was last heard from two years after the operation, the relief from headache and neuralgia continued, although, as previously stated, the pain for some time before the operation was of the most intense character. In other respects her general condition has been good. She still continues to be partially paralyzed, with astereognosis and sensory changes on the right side and still has paralysis in the distribution of the left seventh nerve. It is altogether probable that a lesion of some sort is still present; not improbably she has more than one lesion, as the symptoms point both to the pons and to the left parietal lobe. The case is especially interesting as showing how in some cases the cerebellopontile angle can be exposed and how pain and other symptoms of brain tumor are sometimes relieved even when full success is not obtained.

(*To be continued.*)

FEMORAL HERNIOTOMY.*

A. J. OCHSNER, B.S., F.R.M.S., MD.
Surgeon-in-Chief of Augustana Hospital and St. Mary's Hospital;
Professor of Clinical Surgery in the University of Illinois.
CHICAGO.

The subject of herniotomy for inguinal, umbilical and ventral hernia seems to have come to a practical conclusion by the universal acceptance of the different principles embodied in the methods in inguinal herniotomy introduced by Bassini and further developed by Andrews, Ferguson and Coley; the method of Mayo for umbilical hernia; the method of anatomic dissection and union of corresponding layers in cases of postoperative ventral hernia and hernia of the linea alba.

TREATMENT OF FEMORAL HERNIA.

It is in femoral herniæ that the methods still differ greatly. As a matter of convenience to the reader I have added a short summary of the most important ones of these various methods.

The object of this paper is to introduce into the treatment of femoral hernia a principle which has for many years been universally recognized in surgery and which has, it seems, been employed by only a few surgeons in the treatment of femoral hernia.

It is a well-known fact that it is practically impossible to keep a circular opening in any part of the body from closing spontaneously unless it be lined with a mucous or serous membrane. The anatomic relations at the femoral canal are such as to form ordinarily a definite circular opening.

LITERATURE OF THE SUBJECT.

As early as 1879 Socin[1] speaks of six of these cases which apparently were permanently cured by simply removing the hernial sac and fat and suturing the skin, thus making use of the principle which I have mentioned. Since that time I find in the literature a number of interesting articles written by Anderegg, Lesirink, Munsinger, Julliard and Biedel in which this principle was employed in a measure, but no one seems to have attributed the success of this operation in obtaining a radical cure for femoral hernia to the principle I have mentioned.

Singularly enough surgeons seem to have had perfectly satisfactory results by doing nothing further than thoroughly to dissect, ligate and remove the sac, the preperitoneal fat, and to suture the skin until the method of operating for inguinal hernia was introduced by Bassini. Subsequent literature shows that surgeons, writing on the subject of femoral hernia, reason from the conditions present in inguinal hernia, although anatomically these conditions are entirely different and, therefore, the conclusions arrived at must necessarily be faulty. As a result of this fact a number of methods have been introduced, most of them resulting in a distortion of this opening, and each of these producing a considerable number of recurrences.

---

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Langenbeck's Arch., vol. xxiv.

AUTHOR'S METHOD.

The femoral canal is bounded anteriorly by the transversalis fascia, Poupart's ligament and the falciform process of the fascia lata; posteriorly by the iliac fascia, covering the pubic portion of the fascia lata; externally the fibrous septum separating it from the femoral vein; internally the junction of the processes of the transversalis and iliac fasciæ forming the femoral sheath lying against the outer edge of Gimbernat's ligament. The femoral opening is lined with the serous membrane comprising the hernial sac which is an outfolding of the peritoneum.

In order to change this into an unlined circular opening which must necessarily close spontaneously all that it is necessary to do is carefully to dissect out the hernial sac quite up into the peritoneal cavity beyond the inner surface of the femoral ring, ligate it high up, cut it off and permit the stump to withdraw within the peritoneal cavity. Removing all the fat contained in the femoral canal and simply closing the skin wound completes the operation for femoral hernia. This method is applicable to all simple femoral herniæ in which an actual femoral ring exists.

Occasionally there is a case in which the hernia is of traumatic origin and the opening is formed by the tearing of one edge of the ring, so that the opening is no longer regular and circular. A similar condition may also be due to a congenital deformity. Such an opening may not close spontaneously; in such cases there can be no indication for using this method. Neither is the method applicable to operations for strangulated hernia in which the femoral ring has to be cut to permit reduction.

RESULTS AND DISCUSSION.

I have used this method constantly during a period of fourteen years and am convinced that, barring unusual accidents, recurrences are out of the question if the operation is performed in this manner. I have been able to get definite reports and to examine 30 cases of femoral hernia contained in the following table. None of these operations was followed by recurrence. This number contains only a part of the patients operated, because it was not possible to get information from many of the patients of foreign birth, who do not read or write the English language and who change their residence so often that it is difficult to follow them, but there can be no doubt that the results in these cases correspond to those in which I was able to obtain information.

I have written a letter to each one of the patients on whom I operated for femoral hernia at the Augustana Hospital during the past fourteen years; 56 cases in all. Of these letters thirty-one were answered, twelve were returned through the mail, and thirteen have not been heard from.

Giving all of the answers of those that have responded will, I believe, give a fair idea of the ultimate result in these cases. I have not written to patients operated on in the other hospitals, because the number at the Augustana Hospital seemed sufficient to draw conclusions from. A greater proportion of my English-speaking patients go to this hospital than to my public clinic. I was, therefore, more certain to obtain information from the Augustana Hospital patients than from those operated in the other institutions.

It may be claimed that, if a hernial protrusion has occurred, it will occur again unless some mechanical means be employed for the closure of the femoral opening. A study of the histories of these cases shows that the original cause of the hernia can always be found in some abnormal intra-abdominal pressure of a temporary nature, or in the presence of peritoneal fat in the femoral canal. Severe gaseous distension of the intestines during childhood; whooping-cough; severe cough due to bronchitis recurring every winter; heavy lifting in young girls in the capacity of servants, before they were fully grown; pregnancy; large intra-abdominal tumors; severe sudden strains like lifting a heavy burden or being thrown from a bicycle or a moving carriage, and the presence of preperitoneal fat in the femoral canal are the most common causes. All of these immediate causes can be guarded against, and in this way a recurrence is not likely to occur.

Case 7 will serve as an excellent illustration of the permanency of the closure of the femoral ring when the operation is performed in this manner. The patient was married two years after I performed the operation for hernia. After bearing her first child she noticed a femoral hernia on the opposite side, while the canal on the side operated on remained firmly closed.

Case 8 also serves as an illustration. The patient acquired an incipient inguinal hernia during a period when she did a great deal of heavy lifting. The femoral canal operated remained perfectly closed.

Case 6 is also interesting, because it illustrates the same fact. The patient recovered fully from her herniotomy and remained so until two years later, when she suffered from an intestinal obstruction. A band extending from the mesentery of the ileum to the cecum at the base of the appendix had evidently existed for a long time, there being an indefinite history of peritonitis due to appendicitis several years before the patient came to the hospital for herniotomy. Two days before the patient entered the hospital a portion of the ileum had slipped under this band and had become strangulated. The patient was brought to the hospital with an enormously distended abdomen. She was operated on and recovered. The scar at the seat of the original hernia was stretched together with all the tissues of the abdominal wall, but this did not suffice to cause a recurrence of the hernia.

In cases in which the femoral ring has been artificially closed there is always a distortion of the circular opening unless this closure be according to the method advised by Cushing, Marcy or Kuester consisting in a circular suture which does not interfere with the arrangement of the femoral ring.

The method devised by Kocher, consisting in suturing the pectineal fascia over the opening, and the method advised by Lucus Championierre, which is very similar, are also relatively harmless. The study of the literature shows that the method of closing the opening by distorting the femoral canal will result in keeping it open in a considerable proportion of cases, some of these producing as high as 18 to 20 per cent. of recurrences. These facts seem to indicate that in this definite class of cases of femoral hernia the principle mentioned above should be employed.

PRINCIPAL FEATURES OF METHODS.

In order to sum up this subject somewhat comprehensively in the brief space in which this paper must be limited, it has seemed proper to mention the principal features of the most important methods which have been practiced in a considerable number of cases of femoral hernia.

1. Ligature and extirpation of sac: Socin, Anderegg, Leisrink, Munzinger, Julliard and Riedel.
2. Suturing of Poupart's ligament to pectineal fascia: De Garmo, Mocher, v. Frey, Berger, Czerny and Schede.
3. Two rows of sutures of Poupart's ligament to pectineal fascia by Bassini.
4. Two rows of sutures attaching falciform to pectineal fascia by Champonierre.
5. Purse string sutures: Cushing.
6. Purse string sutures and pad made by doubling sac: Curtis, MacEwen, Tricome, Coley, Reffa and Fortunat.
7. Purse string suture in several tiers: Kuester.
8. Closing femoral opening by muscular aponeurosis flap: Salzer and Dawborn.
9. Closing femoral opening by periosteal flap: Trendelenburg
10. Closing femoral opening by decalcified bone: Thiriar.
11. Closing femoral opening by ball of catgut: Schwarz.
12. Cutting through periosteum of ramus; three holes bored through bone; silk suture to Poupart's ligament: Hammersfahr.
13. MacEwen's method of making pad from sac combined with attaching Poupart's ligament to bone with mattress sutures: Nicoll.
14. And suturing Poupart's ligament to bone: Mikulicz.
15. Fastening Poupart's ligament to ramus with staple: Roux.
16. Passing a ligature through obturator foramen to tie down Poupart's ligament: Cavazzani.
17. Cutting Poupart's ligament from its moorings and sewing it to ramus: Fabricius and Delageniere.
18. Changing femoral into inguinal hernia: Ruggi.
19. Fastening conjoined tendon to ramus: Lotheisen, Codivilla and Parry.
20. Cutting entirely through Poupart's ligament just to the inside of the femoral vessels and making a triangular flap which is sutured to the periosteum of the horizontal ramus of the os pubis.

These methods may be classified in four groups:

1. Those in which the sac has been removed high up.
2. Those in which it has been utilized to form a pad.
3. Those in which the femoral canal has been left in the form of a circular opening.
4. Those in which it has been distorted either by cutting or suturing.

It seems reasonable to affirm that every method which does not contain the third of these characteristics must be considered bad from a surgical standpoint.

PROCEDURE OF DIFFERENT METHODS.

In order to make comparison convenient I have tabulated the various steps which are followed by surgeons of the greatest experience who practice the various methods which have been employed in the largest number of operations for the relief of femoral hernia.

I. SOCIN'S METHOD.

1. Skin incision a little below and parallel with Poupart's ligament.
2. Freeing of sac high up into abdominal cavity.
3. Removal of all fat and loose tissue.
4. Pulling down sac by assistant.
5. Ligating and cutting off sac high up.
6. Having stump slip into peritoneal cavity.
7. Suturing of skin incision.

II. CUSHING'S METHOD.

1. Free sac well beyond its neck, transfix it, tie it off as high as possible to avoid a funicular process.
2. Introduce a purse string suture of chromicized catgut through Poupart's ligament, the pectineal fascia and muscle, then outward through fascia lata covering femoral vessels and finally up through Poupart's ligament again coming out one-half inch from where suture was started.
3. Tie the suture and obliterate femoral canal.
4. Suture skin incision.

III. COLEY'S METHOD.

1. Thoroughly free sac well beyond neck.
2. High ligation of sac.
3. Suture is introduced through Poupart's ligament or the inner portion of the canal or crural arch, thence downward into the pectineal muscle or floor of canal, outward through fascia lata overlying the femoral vein and upward through Poupart's ligament or roof of canal, emerging about three-fourths of an inch from point of introduction.
4. On tying suture the floor of canal is brought in apposition with roof of canal and the femoral opening is obliterated.
5. Close superficial fascia with catgut or fine tendon and the skin with horse hair.

IV. CURTIS' METHOD FOR CLOSING THE CANAL AFTER THE SAC HAS BEEN REMOVED.

1. Three superimposed circular purse string sutures of catgut are introduced.
2. The first at the internal femoral opening.
3. The second one-third of an inch outside of this.
4. The third at the external surface of canal.
5. This method is not suitable for large herniæ.

V. LOTHEISSEN'S METHOD.

1. Incision parallel to Poupart's ligament and a little above same dividing fibers of external oblique and extending into external inguinal ring.
2. Expose neck of sac by entering between Poupart's ligament and the internal oblique.
3. Dislocate sac by pulling same, if small, into opening above Poupart's ligament.
4. In large hernia, dislocate the skin at the lower edge of the original incision, expose the external surface of the sac, incise sac and finally dislocate the stump of the sac in manner previously described for small hernia.
5. Suture edge of transversalis and internal oblique muscles to Cooper's ligament.
6. Suture the incisions in the aponeurosis and skin separately.

VI. NICOLL'S METHOD. (A)

1. Expose sac and clear from surrounding tissue, making the incision vertical or transverse.
2. Open sac longitudinally in middle line and clear contents.
3. Separate neck of sac for one inch around abdominal aspect of ring.
4. Bisect sac longitudinally from fundus to neck.
5. Make an aperture in one-half near the neck.
6. Interlock the halves by putting the other through one of the apertures.
7. Reduce whole sac through the femoral ring by detaching its neck from the abdominal aspect of the ring.

B—Closure of femoral ring by use of the pubic ramus.

1. Carry an incision (bone deep) from femoral vein along the pubic ramus to the region of the pubic spine.
2. Detach the periosteum to a limited extent and retract it.
3. Drill one or two holes in the bone near its upper edge one-half inch to one inch apart.
4. Pass loops of strong catgut through the apertures.
5. Divide the loop of ligature. Thread one end in a curved surgical needle and pass a mattress suture through Poupart's ligament. Repeat with second end, carrying it through Poupart's ligament at a higher level, avoiding the deep epigastric artery, and the spermatic cord above in males.
6. By means of probe withdraw both ligaments through the second drill hole in the bone.

wall bulged so much under the influence of extirpation, while the patient was on the table, that I at once decided to implant a filigree. This was done and a hernia, no doubt, was prevented. The patient died five and a half months later, however, of general carcinoma, hence, this case teaches us very little as regards ultimate results.

Case 7.—Feb. 28, 1903, I operated on a young woman, aged 22, who had had the lower right abdominal wall considerably damaged, as the result of a kick. A filigree was inserted under the shelving edge of Poupart's ligament and the aponeurosis, with the result that the patient, who had been unable to stand erect for two months before the operation, was now enabled to go about her usual vocation without discomfort. Six months later she was in perfect condition, except for a feeling of stiffness in the scar. Since that time I have been unable to get news from her.

Case 8[3].—June 22, 1903, I operated on an unmarried woman, aged 51, who had suffered for twelve years with an immense interstitial hernia. This had worked its way through the right inguinal opening, up between the aponeurosis and the internal oblique. The two structures were so attenuated, as the result of long-continued pressure, that I considered them hardly sufficient to subserve their normal functions after the removal of the sac; hence, a filigree was implanted between them with most satisfactory results. I have just heard from this patient, and learned that she has had absolutely no sign of weakness in the abdominal wall, or, in fact, no other symptom from the presence of the large mass of silver wire, since the operation, three years ago.

Case 9.—June 29, 1903, I was permitted by Dr. Deutsch, of this city, to offer some suggestions as to the treatment with a filigree of a patient on whom he operated on that date. The patient was a man, aged 36, who had been subjected to drainage for appendicitis ten years before. Within a year after the first operation a hernia had appeared in the wound, and during the succeeding nine years he had been the subject of constant abdominal colic. A large filigree was placed on the muscles which could be brought together and the aponeurosis sewed partially over this. I saw this man a year later, and there was absolutely no bulging, although, it might be added, that some of the continuous silver wire suture, which had been used in everything but the skin, was attempting to work its way to the surface. I now use catgut in sewing the various layers and have, in consequence, no more of these experiences, disagreeable to the patient and surgeon alike. I heard from this patient two years after the operation for the last time. He was, at that time, still possessed of an intact abdominal wall.

Case 10.—July 18, 1903, I implanted a filigree in Mrs. F's lower median abdominal wall for the repair of a hernia, which had resulted from a drainage operation, undertaken six months earlier for tuberculosis of the peritoneum. At present she is perfectly well and hard at work.

Case 11.—July 20, 1903, I treated, by this procedure, one of the most remarkable postoperative herniæ that I have ever seen. The patient, a woman, aged 43, had been subjected to hysterectomy six years before I saw her. She had spent six months in bed before her drained wound healed, but no sooner got up than a small bulging appeared. This gradually increased in size, until the date mentioned, when I found the low median ring, more than four inches in all diameters, and approximately round. This patient was a thin woman, with a board-like abdominal wall, which rendered it manifestly impossible to close the opening by any form of autoplasty. I implanted an immense filigree beneath the recti muscles, which were drawn out of their sheaths sufficiently to permit of them being brought together in the middle line, although the fibrous structures in front could not be approximated by any means. Two months after the operation she was in perfect physical condition, but has not been heard from since that time.[4]

Case 12.—Sept. 29, 1903, a large filigree was placed low down in the median line of Mrs. S's abdominal wall. She had been operated on fifteen years before, and had an immense hernia. She was seen recently and is in perfect condition.

Case 13.—June 6, 1905, I implanted a filigree in the lateral abdominal wall of Helen M., aged 10, on whom I had operated for purulent appendicitis six months previously. Extensive drainage had been used, and a small hernia had appeared almost as soon as she got up from bed. Since the second operation she has remained entirely cured, until the present time.

Case 14.—Oct. 13, 1905, I operated on Mrs. H., aged 52, who was afflicted by a fibromyoma of the uterus, about the size of a man's head, also by an umbilical hernia, about the size of an orange. In addition to this, there was a prolapse of the posterior vaginal wall, all three conditions being treated at *one sitting*. Through a median incision, which extended from the pubis and around one side of the umbilical ring, I excised this latter, and removed the abdominal growth. In order to close the abdomen at all I had to remove the omentum, which had lain in the hernial sac. In order to make the closure more simple, I simply placed an immense filigree beneath the edges of the thin atrophic recti muscles. It was impossible to bring these together, without too much tension, so I contented myself with merely carrying them a short distance over the ends of the wire loops, so that the filigree would remain in its bed, and over all I closed the skin. In this way it will be readily seen that I accomplished a very simple, and what has proven to be effectual, abdominal closure. In little more than two weeks this patient was up in a chair, and a few days later went home, the abdominal wound being perfectly solid.

Case 15.—Oct. 31, 1905, I implanted a filigree beneath the aponeurosis of a boy, aged 12, on whom I had operated for purulent appendicitis two weeks earlier, the wound having been left wide open. His physician removed the filigree without my knowledge a few days later.

Case 16.—Nov. 17, 1905, I implanted a filigree beneath the aponeurosis of Mr. V's abdominal wall. His appendix region had been drained three months before, but the cause of the trouble not removed. In taking out the appendix I damaged the wall to such an extent that I feared a hernia. Much pus was encountered, but, nevertheless, the contrivance healed in, with the result that he is now hard at work with a sound abdominal wall.

Case 17.—Jan. 25, 1906, a large filigree was used on Mr. K., on whom I was operating for cirrhosis of the liver. He died two days later, however, and the case has no especial instructive features.

Case 18.—Jan. 28, 1906, I implanted a filigree in Mr. D's abdominal wall, in order to forestall a hernia after a long incision for gall-bladder and appendix disease. At present he is engaged in lifting heavy weights, but, nevertheless, has remained perfectly well.

Case 19.—Feb. 19, 1906, I operated on a blacksmith for gallstone and appendix disease. Fearing that a hernia would result, in the long incision I implanted a filligree in closing the abdomen. He is now working hard at the forge every day, and is in perfect condition.

Case 20.—Feb. 27, 1906, I made a very long incision to the right of the rectus muscle in Mrs. S., the appendix was removed, and the higher structures examined. To forestall a hernia, a filigree was used in closing the wound. I saw her June 1, 1906, and know that she is in perfect condition.

Case 21.—May 18, 1906, I used a filigree in the abdominal wall of Mrs. B., aged 33. In September, 1905, her appendix had been removed, the wound was infected and an immense hernia was caused. In spite of an infection, after my operation, the filigree has healed in place as though nothing had happened.

Case 22.—May 9, 1906, I implanted in the abdominal wall of Mrs. L., a large filigree for the cure of a low median postoperative hernia. The abdomen had been opened seven years previous to this time, and an ovary removed. As soon as she got up from bed, she had a very weak feeling at the site of the incision and always wore a binder. Four years after the operation, a bulging appeared in the scar, which gradually increased in size until now it is as large as the head of a newborn infant. She felt that she had no support at that point.

---

[3] Cases 8, 10 and 11 are very fully described in the Interstate Medical Journal, 1903, No. 9.

[4] Cases 12 to 22, inclusive, as well as Case 9, are here reported for the first time.

she could not lift anything, and could not go upstairs. Her sufferings had made her a complete nervous wreck. On the date mentioned, I opened the sac, removed an immensely long appendix, and implanted a filigree beneath the muscles. Two weeks later she was up, but the next day a little pus and necrotic fat from her immensely thick abdominal wall came out at the lower end of the wound. There was no more trouble after this, however, and she is now in perfect condition.

DISCUSSION.

ON PAPERS OF DRS. OCHSNER AND BARTLETT.

Dr. A. U. Tuttle, Cambridge, Mass., said that about seven or eight years ago he read a paper on the insertion of silver wire in hernia, and that time operated on about fifteen patients. He used the wire in the treatment of ventral herniæ following appendicitis operations, also in umbilical, femoral and inguinal herniæ. Within a month of the present time he pulled out wire that had been breaking up in the patient for about six months, wire that had been put in six or seven years ago. On thinking the matter over he is satisfied that the silver wire is affected by the body juices as much as any other suture, but, perhaps, not quite so fast. After the wire had been placed in the body, whether deep or superficially, whether in a clean or in a suppurating wound, whether in a wound with primary healing or in one with secondary changes, it is only a question of a very short time when the wire becomes brittle, when it will break up and become absolutely valueless so far as holding the wound together is concerned. In regard to the question of recurrence of herniæ, the wire promotes a local irritation; sets up an increase in the connective tissue and scar formation, so that many of these cases have proved successes after the use of the wire. But the fact that silver wire produces local irritation and breaks up and comes out in fragments has been so universally noted that he thinks that after a comparatively short experience with it surgeons will see that some other suture must be used.

Dr. A. H. Ferguson, Chicago, stated that he has done operations for femoral herniæ according to various methods, finally by removing the sac and suturing Poupart's ligament and the falciform process to the pectineus muscle. But if Dr. Ochsner can show such excellent results by a still more simple process, surgeons will do well to discard all other procedures and follow his method. Dr. Ferguson has never seen a return after a radical operation for femoral hernia, either in any of his own cases or in those of others, so that the old operation probably will do as well as any other. With regard to getting at the hernia, he said that he makes his incision above Poupart's ligament parallel with it, about half an inch above it. He retracts the lower lip of the wound after exposing the ligament, then cuts through the thin fascia to Gimbernat's ligament. By this method the surgeon gets at once to the neck of the sac and with one sweep of the hand from within outward can turn out the sac and hernia on the palm of the hand. On the other hand, if he commences to dissect from the top of the hernia he will get adhesions. It will also be found that there are almost two sacs in femoral herniæ, the thin layer which covers the fat, and then the considerable layer of fat, before coming to the true sac. By going at it from above downward there will be no difficulty whatever. Every sac should always be opened. The sac should never be tied off without being opened. The other advantage of making this incision above is that the abdominal ring (external) is exposed and the surgeon can pass his finger through it and inspect the condition of the internal ring. There may be a deficiency there, which by opening up to the internal ring may be rectified and the formation of an oblique inguinal hernia prevented. Dr. Ferguson has seen several cases of oblique inguinal hernia appear on the same side that the femoral hernia was operated on.

Dr. H. M. S. Dawbarn, New York, said that he was impressed with the fact that Dr. Ochsner agrees absolutely in his teachings with other surgeons who have studied this subject carefully. For example, Czerny, Nussbaum, Sewell, Barker, Ball, MacEwen, Bassini, Halstead and others have stated time and again that unless the sac is obliterated the hernia will return. That, Dr. Dawbarn said, is the reason Heaton, the first quack to advocate the cure of rupture without the knife, failed. Heaton emptied the sac, whether it was a femoral or an inguinal hernia, and then filled it, by means of a syringe and long hypodermic needle, with glycerite of tannin, which, acting as an irritant, caused a great exudate of fibrin, "Nature's glue," partly filling the sac and obstructing a return of the hernia. Six months afterward he had the results looked up and there was 100 per cent. of relapses. Little by little, the bowel produced absorption, by pressure from above, of this plug obstructing the entrance to the sac, and finally the original trouble was reproduced. Dr. Dawbarn said that he can see no advantage in doing away with the sac though he does approve of obliterating it as a cavity. It is a mass of vital tissue and it seems wise, he said, for that reason, after dissecting it loose to carry out the MacEwen principle to make use of it, drawing it by gathering string into a solid mass well above the level of Gimbernat's ligament, to oppose by its presence the entrance of a hernia into the beginning of the femoral canal. Dr. Ferguson has used this method three times without having a relapse, although the first patient operated on has not yet passed the three-year limit. His technic is as follows: After doing away with the sac in the manner mentioned above, he dissects the loose tissue off the front wall of the rectus, leaving the bare rectus sheath. Beginning nearly at the level of the umbilicus, a strip, two or three inches wide, of the front sheath of the rectus is dissected for a sufficient distance, leaving the rectus bare. He doubles that flap down on itself, tucks it beneath Poupart's ligament, through the external ring, and sews the lower edge of that sheath with chromicized suture material to the lower edge of the femoral ring and to the pectoralis muscle and fascia. Dr. Ferguson said that it seems remarkable that surgeons generally, both in inguinal and femoral herniæ should forget that excellent principle of military tactics, namely, that if one ever expects to whip the enemy he should never forget the line of retreat. To apply that principle to hernia operations, Dr. Ferguson always makes a large semicircular or horseshoe-shaped skin incision; convex upward in inguinal hernia, convex downward in femoral, instead of the customary straight-skin cuts. These curved incisions are so placed that they surround the place where, if ever a relapse should occur and a truss life be resumed, the pad should properly rest. Consequently, the pad never would have to chafe or press on a scar, as it must do, to the patients' discomfort, if the more usual method be employed, i. e., a straight cut, in attempting radical cure over the greatest prominence of the hernia.

Dr. A. J. Ochsner stated that all the cases he reported date back at least one year, and one fourteen years. He had a most interesting experience with silver wire. About fourteen years ago while visiting Dr. Max Schede's clinic in Hamburg, he found that Dr. Schede used silver wire very freely in preventing hernia after abdominal section and in operating for the radical cure of hernia. Next Dr. Ochsner visited the Edinburgh clinic, and in speaking to Mr. John Chien was told that thirty years before a surgeon in Edinburgh had put in silver wire, and they were still taking it out. Consequently, Dr. Ochsner has not used it. He finds that with the exception of the late results for hernia in which the ring was destroyed, either by the original injury or by the operation for the reduction of strangulation, or by some foolish operation, that almost no one seems to have had a recurrence, provided, as Dr. Dawbarn says, the sac and also the peritoneal fat have been thoroughly removed.

In regard to the similarity between inguinal and femoral hernia, he directed attention to the fact that about eighteen years ago Mr. William Anderson, of St. Thomas Hospital, London, began to operate on inguinal herniæ by simply removing the entire sac, ligating it and permitting the stump to retract and suturing the skin, and when Dr. Ochsner visited his clinic seven years later, Mr. Anderson had operated on some three hundred cases without a recurrence. After that, for a considerable period of time, until Dr. Ferguson's method was published, Dr. Ochsner operated on small and medium-sized inguinal herniæ, in which there was not a congenital deformity, in that manner on one side on all double herniæ and by the Bassini method on the other side. He found that neither method was followed by an appreciable number of recurrences. Later on he made the Bassini on one side and the Ferguson on the other, and now he does the Ferguson operation altogether. But the principles mentioned must be present. Supposing the surgeon wishes to make an artificial vagina, or to keep open a rectum in which there is a stricture, he can not do it unless he lines it with mucous membrane. This principle does not always apply in umbilical hernia in the adult. In the infant where the canal is actually circular, in 97 per cent. of hernia in the adult, where the abdomen shortens umbilical hernia in the adult, where the abdomen shortens laterally, the opening is no longer circular, but becomes enlongated and the principle is abolished. These herniæ do not close by simply removing the sac.

HEREDITY AND ENVIRONMENT AS FACTORS IN THE LIFE AND DISEASES OF CHILDREN.*

C. F. WAHRER, M.D.
FORT MADISON, IOWA.

In the first chapter of Genesis and the eleventh verse it is written: "God said, Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit, after his kind, whose seed is in itself upon the earth, and it was so." In the twenty-first verse: "God created great whales and every living creature that moveth, which the waters brought forth abundantly, after their kind, and every winged fowl after his kind." In the twenty-fourth verse, also: "God said, Let the earth bring forth the living creature after his kind, cattle and creeping thing and beast of the earth after his kind, and it was so." And to confirm these statements, it is reiterated, in the twenty-fifth verse that: "God made the beast of the earth after his kind, and the cattle after their kind, and every thing that creepeth upon the earth after his kind; and God saw that it was good." Thus it was a fixed law that in order to avoid confusion, every living thing, whether it be plant or animal, shall produce offspring after its own kind, thus establishing the law of heredity, and also forming at the same time, abundant proof for those who believe in the so-called bathmic evolution.

While no one, from scientist down to the most ignorant casualist, denies the matter of heredity, or that we expect offspring to be like their ancestors, yet many biologists, as well as psychologists, have devised different and even antagonistic theories to account for heredity, and its correlative factor, environment. The firmness of the belief in heredity and its influential factors in determining offspring are especially shown when there appears an apparent exception to the law, that like produces like, or what we call variation. For instance, if an auburn-haired child with blue eyes makes its appearance in a family of dark-haired, dark-eyed parents and brothers and sisters, it causes general comment, and should all questions of legitimacy be settled favorably to the suspected, inquiry will at once be made as to the matter of atavism or reversion to previous ancestors. In order, however, that one may understand, as we proceed, a few definitions may not be out of the way. Heredity is usually defined as the law that accounts for the production of offspring like the ancestors, but as we have occasionally a variation from the ancestors, we usually study heredity and variation together. Variation is usually due to some disturbing factor, which modifies the workings of the law. Weismann, a German biologist of note, held to the theory that only inherent qualities can be transmitted to offspring, acquired characteristics and habits can not be transmitted. According to him, parents are merely trustees to hand down their commingled stocks to their offspring. The effect of training and education of parents can not be inherited by the children. This differs from the saying of the late Oliver Wendell Holmes, that if you want to make a scholar out of a child its training must begin 200 years before it is born. From bad stock, according to Weismann, can come only bad offspring, and if a member of such stock, through special training and education and the result of favorable environment, should prove an exception to his family, yet his offspring will inherit but the old taint, and none of his acquired good qualities. Darwin's views are similar, primarily stated, but when we read his "Descent of Man," his theory of evolution dependent on the two great factors, sexual selection and environment, we must see that in practice, Darwin believes in the transmission of acquired, as well as of inherent, characteristics.

The English philosopher, Locke, believed that all people are endowed with the same amount of qualities or inherent characteristics, and that with the same amount of work and application all could achieve the same results in any field. The very opposite views are held by Galton, as we see in his "Faculty and Education" and his great work on "Nature and Nurture." The latter is probably nearer right than Locke. Haeckel has views similar to Darwin's, and Lamarck is diametrically opposed to Weismann, and many instances can be quoted to prove his contentions. For instance, the matter of telegony is one of them, and, while mentioning the word, I will also define it: Telegony is the reversion in children of one parent to characteristics of a former mate. For instance, a mare, having been bred to a quagga, an animal striped similarly to a zebra, later, when bred again to a horse, produced a colt with the stripes of a quagga. So, also a bitch, that was bred with a mongrel had pups characteristic in color and other qualities similar to the mongrel, yet when bred to a pure-bred animal of her own kind gave birth to a litter, some of which were marked like her former mongrel mate. Numerous examples could be mentioned which can not be gainsaid. On the other hand, we know that the rite of circumcision has been practiced among the Jews for several thousands of years, yet no Jewish boys are born without foreskins. Shepherds, who amputate the tails of all lambs, and have done so for centuries, must still repeat the process to-day, as so far no bobtailed sheep are born. But, *per contra,* Brown-Séquard, who did many bizarre things and who created artificial epilepsy in guinea-pigs, had the pleasure of seeing epilepsy develop in the offspring, even to the third generation.

Among dogs, retrievers and setters seem to have transmitted their acquired education to their offspring, as a well-born retriever will invariably practice retrieving without being taught; hence it seems the quality of retrieving, originally taught his ancestors, was in this instance transmitted to him. Weismann to the contrary, notwithstanding, Brown-Séquard's epilepsy experiments form a valid excuse now for asking the question that will interest this Section, namely, Are diseases, like certain traits, inherited, that is, transmitted from ancestor to posterity? And, if so, have these diseases always existed in this particular tribe or family, or were they first acquired and then transmitted? If the latter, how can Weismann be right, who says acquired characteristics can not be transmitted? Is there a taint of fatalism in such views that declare we can not change anything permanently, so that hereafter when a certain happy result is accomplished by environment, education and training we can not entrust it to reproduce itself, but must continually keep up the work of the same environment and training? If this were so, what is the use of the practice and study of eugenics, except as they repay us in immediate results?

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

According to the laws of heredity, if a father and a mother were in all respects exactly alike, and not taking into account theoretically their ancestors, then their offspring would exactly resemble them, and also each other. But this assumption is only to help us form the law of coefficients of heredity. Namely, if the quantity of a certain trait in the father were assumed to be one, and the same in the mother, we would expect the child to have the same trait in the same quantity, namely, one. But if one parent have this trait and the other only one-half, then we would expect the child to have only three-fourths, provided there is no prepotency existing in one parent or another in this especial trait. But—yes, but—any given person has, as far back as the tenth generation, a totality of 1,024 ancestors, including his parents, as can easily be shown by calculation. Now, all of these 1,024 have added their share of hereditary influences to his physical, mental, moral and psychical make-up, not to mention telegonic and bathmic influences, plus all the environments of Lamarck, Darwin and Haeckel. Mention of the word bathmic demands some definition. The word is from the Greek bathmos or basic; it refers to certain basic or inherent principles or characteristics existing in every individual to reproduce its own and to revert back to the reproduction of its primitive types, when not trammelled by environment or education or training. An illustration of bathmic evolution exists in the begonia and some other plants, a leaf of a begonia when planted in the ground takes root and grows and reproduces the entire plant, thus showing an inherent growth force. To illustrate more distinctly, no matter what seed is sown and under what circumstances or conditions, if it grows and reproduces at all, it will produce the same kind of organism that gave rise to the seed. By environment and education or training the horticulturist produced many varieties of apples by processes known as budding, grafting or pollenization, yet seed planted from these desirable varieties will revert to the original species, and all the acquired qualities will eventually be lost. Will this also be the case with human stock, rescued by social purity societies, prison reformers, eugenic matings of the social reformers, education of the proletariat, intermarriage of the plebeians with the patricians? If so, it will give the lie to those who claim that the continuous influx of Europeans, most of whom come from the lowest class of peasantry, is a direct benefit to the social melting pot of the earth, the United States of America, where live the greatest people on the earth—consisting of more than your 1,024 ancestors? Or have I taken for granted an aphorism whose truth is questionable and belongs not to the real truths, but the assumed ones, the *argumentum ad hominem?* If so, I have taken less for granted than many things on which rest a great number of the most ultra-scientific theories. Much of this reminds one of the contents of the witches' caldron in Macbeth:

"Round about the caldron go;
In the poisoned entrails throw
Toad that under coldest stone,
Days and nights has thirty one.
Sweltered venom sleeping got,
Boil then first i' the charmed pot;
Double, double, toil and trouble;
Fire burn and caldron bubble,
Fillet of a fenny snake,
In the caldron boil and bake;
Eye of newt, and toe of frog,
Wing of bat and tongue of dog,
Adder's fork and blind worm's sting,
Lizzard's leg and owlet's wing,
For a charm of powerful trouble,
Like a hell broth boil and bubble;
Scale of dragon, tooth of wolf,
Witches mummey, maw and gulf
Of the ravinged salt-sea shark.
Root of hemlock, digged i' the dark,
Liver of blaspheming Jew,
Gall of goat and slips of yew,
Slivered in the moon's eclipse,
Nose of Turk and Tartar's lips,
Finger of a birth-strangled babe,
Bitch delivered by a drab,
Make the gruel thick and slab,
And thereto a tiger's chaudron,
For the ingredients of our caldron,
Cook it with a baboon's blood,
Then the charm is firm and good."

This is quite a mixture and smacks of polypharmacy, yet it is a mild and harmless mess when compared to the 1,024 that come to our shores as factors in that product, called the elect of the earth—Uncle Sam's children. Is it a wonder we still have wars, murders, theft, defalcation, social evils, rebate evils, insurance swindles, and crime in high places and low, when "the butcher, the baker and the candle-stick maker," aye, far worse indeed, commingle in marriage to form the ancestors of the coming nations of the earth? Man still makes "countless thousands mourn" as in the days of the plowboy of Ayr. My ultra-scientific friends may accuse me of making a mess of scientific things and poetry yet poetry is the very spirit of truth, and of poet and scientist the former has often proved the greater seer. I might prate more wisely of the pangenesis of Darwin with his theory of gemmules which collect in the reproductive cells, and may be called "undeveloped atoms," and how they are supposed to be transmitted from parent to child, where they are said to remain in embryo undeveloped and later under suitable conditions develop and give so-called transmitted characteristics to the offspring, the theory that helped Darwin out of many rough places in formulating his theories of heredity, but, as no one yet has seen one of Dalton's atoms, so no one has seen Darwin's gemmules, or undeveloped atoms, so you see even the scientist goes begging at times for hypotheses when he is short on facts. Weismann, dissatisfied with the theory of gemmules, conceived that a germ-plasm, which was supposed by him to be a substance contained within each cell and a part of which after transmission to the offspring was never entirely used up, but transmitted to the next generation, and so on, in order to account for the continuity of the germ-plasm through ages and generations. We know cells, we know their nuclei or nucleoli, and their network and frame work, but we have never know germ-plasm, that has hitherto escaped us, though we courted it with aniline stain and acetic acid. One may as well quote poetry as such science.

The same is true of the theory of gametes and the applications of algebra, the formulæ of the calculus to establish the variant coefficients, the study of hypothetical zygotes, the elusive doctrine of Lloyd Morgan's metakinesis, the "something which is not yet consciousness, but which may develop into consciousness." All these theories and others too numerous to mention are often met with solid cold facts that are hard to harmonize. We may ask why do we continually seek to improve existing conditions, why teach or instruct, if all of it must continually be done over again, if nothing good has a continuance or abiding place, when we must fear overeducation and overtraining in one as much as undertraining in another? Will our striving ever attain some permanency? It does seem so at least! Can we improve bad stock without at the same time causing deterioration of the good stock when we practice sexual selection? Has the good and beautiful any prepotency over the bad and the ugly? Is an average better than two classes, the good and the bad? Or must we in so-called stirpiculture finally aim at the destruction of the bad by the good? Is not that a somewhat questionable procedure by the good? One is reminded, even if not forcibly of a conversation between an impertinent inquirer into the history of the ancestry of Dumas the younger. Said he: "I understand your father was a mulatto?" "Yes," answered Dumas. "And your grandfather?" Dumas answered, "He was a negro." "And his ancestor?" still probed the inquisitor. "He was an ape," said Dumas; "you see my ancestry begins where yours ends." Also another incident comes to my memory in the matter of improving our race by destroying the bad and vicious. Long ago I read an investigation into the doctrine of original sin by that great Bostonian who invented the hub around which the universe spins, the story of Elsie Venner, in which the question arose as to the right to exist, for instance, of the cats and the rats, yet the especial object in life of the cats was to destroy the rats. Did he mean that the good should destroy the bad? So far as the laws of Nature are concerned, the matter of pity has no place in her code. If an innocent babe should violate the law of gravity on a window sill of one of our skyscrapers, no good angel will interpose and intercept the falling innocent to prevent its horrid death and thus stay a tragedy in the breast of its mother. So, I think, when Nature herself is slow in making selection and survival of the fittest, man should hasten the process by the aid of environment. It may be foreign to the letter of this paper to include what I wish to say to you, but it may be useful to do so, and utility may be a reasonable excuse for any transgression of a theory. I think it would be right if, by legal enactment, the defective, the degenerate and the vicious could be so treated that procreation from such stock would be an impossibility. The researches of Dugdale remind us of the notable case of the Juke family of New York, who furnished in their progeny 1,200 people, most of whom were paupers, thieves or prostitutes, and who cost the Empire State, in trials, prisons and almshouse relief, no less than one and a quarter million dollars. How much property, misery, crime, sorrow and worry could have been saved if that old fisherman, drunkard and libertine, Juke, could have been emasculated before he set up that dynasty of crime and vice so rich in offspring, the spawn of corruption?

Our adolescent youth should have it impressed on them not to form partnerships in life with the descendants of the vicious, for it is literally true that "as we sow, so shall we reap." If parents would exercise as much of their prerogative in selecting marriage partners for their children from this standpoint as they usually do from that of worldly means and social standing, our race would be more desirable in future years than it has ever been since the disobedience of the first pair. I am sure our pseudo-reformers may mean well, but certainly do much harm, when they train the semi-idiotic and the feeble-minded and attempt the reformation of vicious criminals—the vicious youths in our reformatories and others—if they do not at the same time see to it that these hordes do not reproduce their own kind as the sands of the seashore. In doing as they now do, they only arouse their Nemesis, as Frankenstein created the monster without heart or conscience, that strangled without compunction, all that was dear to him on earth. The educated imbeciles and reformed criminals breed, if not prevented, like flies and rats. They even marry the good, if not the wise, who know not their antecedents, and thus dilute the human race with vice and degeneracy.

In the study of heredity we observe that the biologist and physicist often overlap boundaries with the psychologist, yet it is not speculating in theories that will lead us out of the realm of error into that of light so much as aiming at practical results in the study of child life that will produce the ideal boy and man, as well as the perfect girl and woman. The human embryo originates from a spermatozoön that differs very little from that of the horse, dog, ape, worm, fish or fowl, and in its history of prenatal life apparently passes through all the evolutionary forms of the various lower animals. As an analogue we may say the child in its growth and social development passes up through all the various stages of civilization from the most brutal and primitive savage to the highest forms of ideal existence. May this not by a form of atavism account for some of the usually unaccountable origins of crime, murders, thefts, the desire for tramping, sea roving, etc.? I ask, but do not answer. Despite the dictum of Weismann, that acquired characteristics are not transmissible from ancestor to offspring, the consensus of opinion of philosopher, philanthropist and statesman, of scientist and sage, is that Weismann is wrong so far as the practical results of education and training are concerned. If so, it gives pediatrists courage to go on in their good work, not only in combating and treating diseases in children, but in preventing, by proper advice and training, disease tendencies, be they diseases of the body only or those of the mind and psychic existence. These, then, are the lessons we can draw from such a study, whether we hold with Weismann that by eternal vigilance we shall obtain the prize or by holding the converse we can, by a joyous optimism, hope to see the fruits of our labors accumulate in that perfect man and woman we may see, even though only from the Pisgah of our hopes.

If Weismann be correct, if the bad by the environments of education and training can be made good, though bad stock can not be converted into good stock, then we see how grave a responsibility rests at present on every one who has to consider the problems relating to state endowments of education, the making and administering of poor laws, the conduct of charities which yearly spend immense sums. In all these problems the blind social instinct and the individual bias form strong factors in our judgment. Yet these very problems are the ones which, affecting the whole future of society, its stability and efficiency, require us, as good citizens, to understand and to obey the laws of healthy social development. The examples we have considered will not prove futile, nor its lessons worthless, even should Weismann's views, after all, be wrong. It is plain that in social problems such as I have referred to, the laws of heredity, whatever they may be, must certainly influence our judgment. The conduct of parent to child and of society to all its members can never be placed on permanent bases unless regard be paid to what science has to tell us of the fundamental problems of inheritance. The theory of evolution is not merely a passive intellectual view of Nature; it applies to man in his communities as it applies to all forms of life. It teaches us the art of living, of building up stable and great nations, and is as important to statesmen and philanthropists in council as for the scientist in his laboratory or the naturalist in the field. The laboratory experiments of a biologist may have a greater weight in practical life than all the theories of Plato, Hegel or Schleiermacher.

The scientific classification of facts, biologic or historical, the observation of their correlation and sequence, the resulting absolute as opposed to individual judgment, these are the sole means by which we can reach truth in such a vital social question as that of heredity.

1007 Fifth Street.

DISCUSSION.

Dr. F. A. Rhodes, Pittsburg, said that notable writers are diametrically opposite in their conclusions. The question will never be solved until we are able to tell what life is. Some years ago he formulated the definition that animal life (the only life with which we are intimately acquainted) is a correlation of irritable tissues. We may have in our body organs which are apparently healthy, but there may be one small organ, e. g., the pituitary body, which is diseased, and although the condition may be unknown, there is a great loss in correlation of the entire body. In regard to the investigations mentioned by Dr. Wahrer the most recent commentators are of the opinion that the results of some of the experiments are not as given by the investigator himself; that many mistakes have been made in the conclusions. The investigations in the animal kingdom at the present time are very interesting. We accept the conclusions of Burbank for the vegetable kingdom; but as in the animal kingdom the high and low forms of life are very different, so there is still a greater difference between the vegetable and animal forms of life.

That which concerns physicians most is the transmission of characteristics of physical conditions from the parent to the child, which will be for the betterment of the community. Many teach that the child who is born in the hovel of parents who are drunkards or degenerates will be a degenerate; not because of the environments, but because of the parentage. This he does not accept. While we should accept the teaching of Dr. Holmes on the preparation of a child many years in advance of its birth, yet he believes that the environment in which we live has much to do with what we ourselves or our children shall be. An illustration of this is seen in a young man who has passed from the country to the city. He has been virtuous and all the community has considered him such. When he reaches the city and becomes associated with companions of bad habits he may change completely. If the young man had the acquired characteristics which were stable and which would be permanent throughout his life, why should he, when placed in different environment, become different? Dr. Rhodes thinks children will be in accord with the environments in which they live. He studies this subject for the pleasure it gives, but is no nearer the solution at the present time than when he began, nor does he ever expect to be.

Dr. D. S. Hanson, Cleveland, Ohio, called attention to the rapid changes due to environment. For instance, it takes years and years of careful selection of seed, as in raising corn, and requires good soil to produce an ear of corn with the requisite number of seeds to cover the cob. Yet that good seed, planted successfully for a number of years, if placed in poor soil will produce a corn-cob not covered with seed. In other words, poor environment will soon destroy all that was gained by heredity. This will work out also in the animal kingdom. We see horses bred for years and a great speed developed. If such a horse is put into a plow and given the same surroundings as an ordinary horse and all training stopped, in the course of two or three generations there will be a breed incapable of development as were the former ones. In other words, environment makes rapid changes, but the changes of heredity are slow.

Dr. R. B. Gilbert, Louisville, Ky., agreed that the subject of maternal impressions is a big one. He believes that it is well established that accidents to the fetus in utero result from impressions made on the mother or even from traumatisms. He had hoped that Dr. Wahrer would make it plain just how these maternal impressions exist and what is the physiologic law governing them.

Dr. G. E. Robbins, Chillicothe, Ohio, said that he can not believe in heredity further than as a reproductive function. He can not but feel that it is environment that develops the race as we see it. If this were not true we would not be so careful of our children. As parents, said he, we are extremely careful how we rear them and how they are placed. Outside of the purely physical characteristics that may be transmitted he has no faith in heredity, but he does believe in environment.

Dr. M. E. Dunning, Newburgh, N. Y., referred to the children of the blind and deaf. Blindness is much less frequently transmitted to the offspring than deafness. More parents are born deaf than blind. A few years ago in certain statistics it was found that about 10 per cent. of the children were born blind and that the majority of parents had acquired their blindness through accident or disease. It was found that the blindness which had been acquired by the parents was transmitted so seldom to the offspring that it seemed almost an accident when it did occur.

Dr. Wahrer said his paper was certainly liable to misconceptions. He wanted to make himself clear on the point of maternal impressions. He does not believe in them in the usual understanding of the term, and they can not be substantiated except by the most careless, unscientific, hear-say evidence. The first thing many mothers ask is, "Doctor, is the child marked?" If a child is born with a deformity some one is sure to believe that the father or mother has been guilty of some sin or indiscretion. Why should the innocent one be punished? Dr. Wahrer does not believe in the idea, and the trend of medical education is away from it.

His paper was not intended to be a full treatise on heredity. It has been said that certain diseases are hereditary, but this idea is fifty years behind the time. Tuberculosis is not hereditary. We don't know whether cancer is inherited. The same thing is true of many diseases of the child. He said a study of this subject by every pediatrist would give him a different viewpoint on many things pertaining to the chld and would be to the mutual betterment of the child and its medical attendant.

A FURTHER CONTRIBUTION TO THE STUDY OF STOOLS OF STARCH-FED INFANTS.*

CHARLES GILMORE KERLEY, M.D.
Attending Physician of the New York Infant Asylum.
WILLIS C. CAMPBELL, M.D.
AND
H. N. MASON, M.D.
House Physicians of the New York Infant Asylum.
NEW YORK.

The work was undertaken with a view to adding to our information of the digestive capacity of infants for starch foods, a subject on which we have had many and varying expressions of opinion, based on clinical observations.

All the infants on whom tests were made were inmates of the New York Infant Asylum. The advantage of making such a study in institution children is obvious. when we remember that the feeding of such patients (the amount of starch given, for example) can here be kept in perfect control. Further, the test is more se-

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

TUBERCULOSIS OF AN ADENOMYOMA OF THE UTERUS.

WITH A PATHOLOGIC REPORT.*

J. L. ARCHAMBAULT, M.D.
COHOES, N. Y.
RICHARD M. PEARCE, M.D.
ALBANY, N. Y

That tumors in general are not subject to invasion by bacteria, other than those of the pyogenic group, is well known. The simultaneous occurrence of carcinoma and tuberculosis in an organ or tissue is occasionally reported, but the invasion of other tumors by the tubercle bacillus is very unusual. This is especially true of uterine myomata which are seldom involved in even the most extensive tuberculous infections of the adjacent mucosa. The case here reported is of interest not merely on account of the rarity of the condition, but also because of the absence of tuberculosis in the mucosa of the general uterine cavity with but a slight lesion in one tube. The tuberculosis of the myoma and that of the tube were secondary to tuberculosis of the lung, but apparently independent of one another and due to infection through the blood stream. As a fairly exhaustive review of the literature fails to reveal an analogous condition our observation appears to be worthy of record. A detailed report follows:

Clinical History.—H. E., aged 20, an only child, unmarried, was admitted to the Cohoes Hospital January 10, 1906. Her family history offers several points worthy of note. Her mother presents evidence of tabes and her father died at forty-six of a valvular lesion of the heart which formed part of the plainly luetic condition. Her grandfather, on the mother's side, had syphilis, and the grandmother succumbed to general paralysis. There is no direct tuberculous heredity.

Personal History.—The patient had measles in early childhood and showed some indications of hereditary syphilis, viz.: A slowly-healing ulcer of right leg and a nose of the saddle type.

Menstruation beginning at sixteen, has always been very scanty, irregular and tardy, with occasional amenorrhea for periods of five to six months. An epistaxis, apparently vicarious, had been frequent. Menstruation, at first painless, later became more difficult. At no time had there been leucorrhea. Dec. 14, 1904, a pelvic examination showed the uterus to be very small, of the infantile type, and lying in a moderate degree of retrodeviation, with some tenderness in the region of the left ovary.

July 30, 1904, the patient had a sudden attack of hemoptysis. A careful physical examination gave evidence of a localized adhesive pleuritis of the left apex, overlying an area of tuberculosis, involving a considerable part of the apex and extending down and outward toward the axillary line. After a sojourn at the seashore and in the mountains she was considerably improved in general health, while the physical signs had manifestly retroceded and in part entirely disappeared. The following winter (1904) was passed in the mountains and she returned in April still more improved. July 15, 1905, she had a second very slight hemoptysis, but improved rapidly, gaining by November 13 twenty-nine pounds.

Present Illness.—Abruptly, about November 21, she began to complain of soreness and pain in the hypogastric region. The pain was dull in character, intermittent, returning especially in the latter part of the day, and exaggerated by fatigue and standing. The patient had not menstruated in five months. As the pain continued unabated for a week, without any appearance of the menstrual flow, she was advised to return home. On bimanual examination, the cervix was found deviated toward the pubes and the Douglas cul-de-sac occupied by the enlarged fundus of the retroverted uterus. The fundus gave the sensation of a firm mass of about the size of a mandarin and somewhat irregular in shape, being larger on the left, and very slightly movable. The left lateral cul-de-sac was also occupied by another swelling less firm and less voluminous, having neither the fibromatous woody feeling of the main tumor nor the fluctuation of a cyst; this second enlargement seemed almost contiguous with the uterine body. The condition of the right adnexa could not be defined. These conditions were not present at the previous examination, eleven months before.

At this stage, the pulmonary condition presented a marked change. While no advancement of the disease was evident in the left apex and the corresponding axillary region, two new foci had appeared; one in the left base posteriorly and the other in the right interscapular space, close to the spinal column.

December 15, menstruation occurred and lasted five days. After a few days interruption, there was again some slight bloody discharge. This discharge kept on thereafter, more or less irregularly, until the time of operation. The pains became gradually more intense, finally requiring the daily use of some sedative for their control.

January 5, the size of the pelvic mass was considered to have increased materially. On that same date, a few tubercle bacilli with a great number of diplococci and streptococci were found in the sputum. Three previous examinations of the sputum had been negative.

Much concern was naturally entertained as to the exact nature of the uterine condition. The first diagnosis was simply one of a solid tumor, probably a fibromyoma, occupying the posterior wall of the uterus. A closer study, however, of all the evidence suggested the possibility of a tuberculous lesion of the uterus, and this possibility was carefully explained to the family.

Of course, on account of their rare occurrence, the diagnosis of any of the pelvic forms of tuberculosis is seldom made until the abdomen is opened, and even then not infrequently only after the specimen is in the hands of the pathologist. Uterine tuberculosis has no well-defined symptomatology. In the present instance, if a probable diagnosis of a tuberculous condition of the uterine growth was arrived at before operation, it is willingly conceded that we expected to find as well a similar condition of the adnexa and of the peritoneum; that is, a general abdominal tuberculosis. In holding this view, we were influenced by the existing pulmonary condition and by abdominal symptoms which predominated especially during the very last weeks. When the abdomen was opened, it was a surprise, therefore, to find that, aside from numerous and extensive adhesions of an inflammatory nature, the general as well as the pelvic peritoneum was free from tuberculosis.

Surgical Report.—January 11, laparotomy; median incision nine centimeters long. A coil of small intestine was found drawn down into the pelvis and firmly adherent close to the right uterine cornu, evidently accounting for the pain in the abdomen which had been so striking a feature. Both ovaries were fibrocystic. The uterine body, enlarged to the size of an orange, lay deeply in Douglas' cul-de-sac and was so matted up in adhesions that a subtotal hysterectomy was performed. The appendix was inspected and, being healthy, was left undisturbed.

Convalescence was uneventful, and the patient reported April 16, that she had gained ten pounds in weight and was in the best of health.

PATHOLOGIC REPORT BY DR. RICHARD M. PEARCE.

Gross Description.—The specimen consists of a uterus with its appendages. The former is exceedingly firm and almost globular in shape, measuring 17.5 cm. in circumference just below the level of the attachment of the Fallopian tubes and 19.5 cm. over fundus and cervix. The cervix protrudes beyond the globular body as a short, thin, circular canal, 0.8 cm. long and 0.4 cm. thick. Its edges are smooth, rounded and grayish-white in color. The peritoneal surfaces are covered more or less uniformly by course fibrous adhesions. On section the entire length of the uterus from cervix to fundus is 6.8 cm., the greatest thickness, antero-posteriorly, 5 cm. The body itself is 6 cm. in length. The anterior wall is normal in appearance, though slightly thickened, and measures 1.4 cm. at the mid portion of the uterine cavity. The fundus is 1.7 cm. in thickness. The posterior wall is occupied by a globular mass extending from the median line of the fundus to the internal orifice of the cervix (5.2 cm.) and laterally from the peritoneum to the uterine cavity (4 cm.). This mass is composed of firm, dense, greyish-white tissue having a whorl-like appearance and resembling the structure of myoma in a general way, but riddled everywhere by cavities varying from those miliary in size to those 0.5 cm. in diameter. From these cavities escapes a thick, yellow, more or less tenacious pus. The walls of the larger cavities, after the escape of the fluid pus, are seen to be lined by a yellow, soft granular material, suggestive of caseation. These areas extend to within two millimeters of the peritoneal surface and toward the median line approach and apparently involve the mucosa. The cervix is not involved. The uterine canal is 4.7 cm. long, 1.2 cm. of which is cervical. It is greatly narrowed and 2 cm. below the fundus is almost entirely obliterated. In or beneath the mucosa covering the lower portion of the tumor are numerous closely-set, fine, yellowish miliary areas. These do not involve the mucosa of the anterior wall nor that of the cervix.

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

The tubes and areas are atrophied. The left tube and ovary are bound to the uterus by fibrous adhesions; the right is free and has a smooth peritoneal covering. Each ovary contains a few small cysts.

Bacteriology.—Cover glass preparations of material from the cavities in the tumor, stained by methylene blue, show pus cells which take the stain well, many poorly-staining necrotic cells, and much granular detritus but no micro-organisms. Attempts to demonstrate the tubercle bacillus and the gonococcus are negative.

Agar, blood serum and hydrocele-agar tubes are sterile after 72 hours.

HISTOLOGIC DESCRIPTION.

Sections Passing Through Uterine Wall and Tumor.—The greater portion of such show a diffuse tuberculous process in a tissue composed of smooth muscle fibers and containing widely scattered tubular glands. The uterine wall proper, measured beneath the cover glass, is 3 mm. in thickness. No tubercles are present in the slightly thickened peritoneal covering, but between it and the musculature small tubercules are occasionally seen. In the muscle itself, which contains an increase of connective tissue, are a few well-developed tubercles with caseous centers. About the blood vessels are numerous lymphoid cells. The line between the normal uterine musculature and the tumor can not readily be demonstrated. The mucosa over the tumor in the upper portion of the uterus is intact but in the submucosa are irregular accumulations of lymphoid cells. At a point where the definite arrangement of the musculature ceases there is an abrupt transition to diffuse tuberculous tissue containing numerous giant cells and characterized by extensive caseation; few typical tubercles can be seen. In the midst of this are found here and there isolated areas of smooth muscle, containing tubular glands. These latter are lined for the most part by several layers of cylindrical cells, of the type found in the uterine glands, but are tortuous and show more or less irregular dilations. They are not infrequently arranged in clusters and have branching prolongations with but a single layer of epithelium. In the masses of muscle a moderate amount of connective tissue is present and also a slight infiltration of lymphoid cells. The glands are found throughout the new tissue, even at a distance of 2 cm. from the uterine wall and have no relation to those of the mucosa. There is no evidence that the channel of the tuberculous infection was along these glands.

Sections taken at three levels and passing through entire wall of apparently normal portions of uterus opposite tumor show no evidence of tuberculosis. The mucosa in each is normal. A section through the cervix shows no lesions.

A section across the entire uterine canal at a point of greatest constriction shows partial obliteration, but no tuberculosis of the mucosa. The lumen at this point contains a small plug composed of mucus, leucocytes and desquamated epithelial cells.

Right Fallopian Tube.—The mucosa is entirely destroyed. The surface is a chronic granulation tissue within its deeper layers more or less newly formed fibrous tissue. Epithelioid cells are not abundant and are very diffusely arranged. But one definite tubercle with typical giant cell is seen. An occasional oval fibrous and hyaline area is suggestive of healed tubercle, as are also a few small foci of lime salts. In the deeper layers of the muscle coat are accumulations of lymphoid cells and old blood pigment, but no tubercles.

The left Fallopian tube is atrophied, but otherwise not noteworthy. The ovaries are fibrous and contain a few small cysts but show no evidence of tuberculosis.

Careful examination of the peritoneal surfaces of the uterus, tubes and ovaries fails to reveal lesions of tuberculosis.

PATHOLOGIC DIAGNOSIS.

Tuberculosis of an adenomyoma of the uterus. Tuberculosis of right Fallopian tube. Atrophy of ovaries and Fallopian tubes. Chronic perimetritis and perisalpingitis.

REMARKS.

As already stated, we have made a search, although not exhaustive, of the medical literature for analogous cases, but have failed to find such.

Closely resembling the case here reported, however, is one observed at the gynecologic clinic of Zurich by C. Bole (du Locle).[1] A summary of this case reads as follows:

History.—Woman, aged 50; heredo-tuberculosis; menstruation at thirteen; leucorrhea. Patient married twice, no children. Dysmenorrhea and loss of strength.

Present State.—Uterus anteflexed, movable, slightly tender on pressure and about the size of a child's head in volume.

Diagnosis.—*Uterine myoma.*

Laparotomy.—Total hysterectomy after Freund's method. The tumor, when extirpated, is twice as large as one's fist. The macroscopic and microscopic examination showed that it was a rare case of myoma associated with an ascending uterotubal tuberculosis. The vaginal mucosa was not involved, and the etiology could not be determined.

This case, however, is not identical with the one here reported. The tumor is intramural, but the tuberculosis is spoken of as an ascending uterotubal infection, and the myoma as associated with it. From this it may be inferred that the mucosa alone was involved in the tuberculous process. This inference also finds support in the statement that the histologic researches bore only on "the superficial portions, in a state of necrosis." Thus, it would appear from these comparisons that our case might, indeed, deserve to be considered as unique.

Kelly[2] states that "tuberculosis of the endometrium is exceedingly rare as complication in the large myomatous uterus." He has met but one case and in this the disease had extended out into both tubes.

A last point not to be overlooked is the mode of infection or of transmission to the uterine parenchyma.

As regards the pathogenesis of the local lesions in our case, it seems very plausible that the adenomyoma constituted the primary lesion and that the tuberculous infection occurred secondarily. But how did this infection take place? How in this particular case was it transmitted from the lungs?

From the clinical history and from the findings at the time of the operation it seems fair to believe that the propagation of the lesions to the uterine tissue took place through the blood current, and in a similar manner to the only tube involved.

---

[1] Gynækologia Helvetica, 1903, p. 99.

[2] "Operative Gynecology," vol. ii, p. 381.

Infection by means of the blood stream seems to be well supported by the conclusions of M. Schakoff,[3] which may be given as follows:

Genital tuberculosis in women is generally secondary to a florid or latent tuberculosis of the lungs or of the peribronchial lymph nodes, less frequently to an intestinal tuberculosis. The genital tuberculosis is generally propagated by the blood stream, except in the case of vaginal tuberculosis, which may proceed from inoculation by contact.

Tuberculous peritonitis occurs frequently during the evolution of a genital tuberculosis, especially after a tuberculous salpingitis. Any portion of the genital tract may be affected; the tube is involved more frequently, the vagina less often. These inoculations take place by the blood stream; therefrom the uterus or the ovary may become infected by contiguity. Generally the uterus is infected by descending contagion; it may, however, be involved in the first place. A pre-existing disease and the puerperal state may act as predisposing causes. The uterine cervix is rarely the seat of tuberculosis. The tuberculosis of the ovary is almost always consecutive to a tuberculosis of the Fallopian tube, of the peritoneum, or of the rectum; the propagation occurs by contiguity or by way of adhesions. Independent foci may, however, be found in the ovary without any lesions of the surrounding structures; in such cases these foci have been set up by the blood stream.

In the above conclusions, the two points of practical bearing on our case are: 1. Genital tuberculosis in women is generally secondary to pulmonary tuberculosis. 2. In tuberculosis of the uterus or of the ovary, when the tuberculous lesions are found as independent foci without lesions of the surrounding structures, the inoculation has taken place by the blood current. That the latter would appear to be the case is indicated by the absence of tuberculosis in the mucosa, not only of the uterine cavity generally, but also in that covering the tumor itself. It is possible that alterations in the blood supply of the tumor caused a condition of degeneration or necrosis constituting a *locus minoris resistentiæ* and a point of selection for tubercle bacilli reaching these areas through the blood stream.

DISCUSSION.

Dr. Henry A. Christian, Boston, thought that in a case of this kind without close study two interpretations might be given of such a tumor mass. First, that the mass is a proliferative form of tuberculosis, such as frequently occurs in the lymphoid tissues; the other is that it is a definite tumor infiltrated by tubercle bacilli. The presence of glands in this tumor gives weight to the latter interpretation. It seems almost impossible to have these glands in the mass without its being a true tumor formation; moreover, their presence may have been necessary for the development of the tubercle bacillus. Ordinarily, in a fibromyoma there are not the conditions in its dense structure for the good growth of the organisms. In this case there is a loose cellular tissue about the glands which is more favorable for the growth of bacilli. The presence of the glands is of importance in simplifying a diagnosis and determining the character of growth.

---

[3] "Contributions to the Knowledge of Tuberculosis of the Female Genital Organs," Gynäk. Helvet., 1904, p. 139.

Is Boric Acid Ointment Sterile?—On the basis of 125 examinations of boric acid ointment Nyman (*Farmaceutiskt Notisblad*, abst. in *Apotheker-Zeitung*, No. 59, 1906), comes to the conclusion that boric acid ointment with a minimum content of 10 per cent. of boric acid is sterile, but that the sterility of ointments containing less of the acid can not be assumed.

OCULAR INJURIES FROM FOREIGN BODIES,

WITH REPORT OF 420 CASES.*

WILLIAM M. SWEET, M.D.
PHILADELPHIA.

In the following paper are recorded the results of a study of 318 cases of ocular injury from foreign bodies in which Roentgen ray examination was made, the report supplementing a previous study made in 1901 of 102 similar cases. A tabulated statement of the 420 cases is given below.

For purposes of study the vitreous chamber is divided into three sections, the region of the equator including that portion 3mm. in front of, and 3mm. back of, the equatorial diameter; the ciliary region that portion in front of, and the posterior region, that portion back of, the outlined zone of the equator.

Position of body.	First series.	Present series.
In the eyelid	1	2
In the lens	3	14
In iris, or posterior chamber	1	4
In the ciliary region	24	27
Near the equator	21	69
Posterior part of eyeball	12	46
In the orbit	3	11
No body found by x-rays	37	145
Total	102	318

Of the total number of injuries, 356 were caused by particles of iron and steel, 23 by copper, 25 by bullets or small shot, and 16 by glass, stone or coal. In 17 cases the body was situated in the eyelid or orbit, in none of which did the eyeball on the corresponding side escape injury. In one the injury to the lid was complicated by an incised wound of the cornea, prolapse of the iris, and traumatic cataract, all of which must have been made by a second body which did not lodge in the eyeball, or by a blow from one of the workman's tools.

The right eye was injured in 178 cases and the left eye in 242 cases. The relatively greater frequency of injury of the left eye is probably due to the position taken by right-handed workmen in handling their tools and in chipping or hammering metal.

The majority of patients were referred to me for x-ray localization from the Wills Hospital, the Jefferson Hospital, the University Hospital and the Pennsylvania Hospital, and I am under obligations to the surgeons connected with these institutions who operated on the cases for assistance in recording the ultimate result in each case. Many of the patients have remained under observation since operation. Some have returned periodically for examination, others have been visited at their place of business or at their homes, so that the present condition of their eyes has been determined. In others it has been impossible to learn the late result because of removal from their previous homes, and adoption of other methods of livelihood.

In the first series of cases, which includes injuries seen from 1897 to 1901, there were 65 cases in which a foreign body was located in the eyeball or surrounding tissues. Since this published report, three eyeballs were removed, two for iridocyclitis a few months later, and one because of recurring hemorrhage into the interior of the eyeball four years after extraction of the steel. The ultimate result in these 65 cases, so far as data could be obtained, together with the results in the 318 cases of the present series, is as follows:

EYEBALLS ENUCLEATED:	First series.	Present series.
Extraction not attempted or failed	14	19
Extraction successful; enucleated later.	8	26

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906

	First series.	Present series.
EYEBALLS ENUCLEATED:		
No operation attempted	7	13
Bodies in the orbit or eyelid	4	9
Extraction failed	2	6
EXTRACTION SUCCESSFUL:		
Vision, between 6/6 and 6/12	7	20
Vision, between 6/15 and 6/60	4	13
Fingers or hand movements	0	7
Good light projection	9	27
Light perception	6	21
No light perception, eye normal size	0	6
Eyeball shrunken	4	6
No bodies shown by the x-rays	37	145
Total	102	318

The first series of cases covers a period during which the small Hirschberg magnet, operated by fluid batteries, was practically the only instrument available, and insertion of the magnet point into the vitreous was necessary in nearly every case. Notwithstanding the added traumatism of the magnet, the visual acuity in these cases has been retained up to the present time.

In the present series of cases, magnets with greater attractive power have been used, and, although a few of the surgeons have adhered to the method of introducing an elongated tip into the vitreous, most of the operators apply the large, short tip of the magnet at the wound of entrance or at an incision made in the sclera, only entering the smaller point when the magnet at the scleral opening fails to withdraw the body.

In a few instances the metal was removed by the Haab magnet, but in the majority of cases the Sweet magnet operated on the 110-volt lightning circuit was used. Bodies situated in the lens or in the posterior chamber were extracted by way of the anterior chamber, and this plan was followed in four of the bodies located in the vitreous chamber, but the operation of choice has been to withdraw the body through the wound of entrance when still open, or through a meridional incision in the sclera made close to the indicated position of the body, the point of selection being between the external and inferior recti muscles.

In most cases of recent injury the larger magnets have sufficient power to attract the metal without entering the point into the vitreous, and it is only when the body is embedded into the choroid or sclera that insertion of the magnet becomes necessary. It is true that good vision has resulted in spite of the entrance of the magnet point deeply into the vitreous, but experience has demonstrated that this procedure increases the traumatism and contributes to ultimate shrinking of the ball or to iridocyclitis.

Cases not seen until weeks or months after injury must be dealt with according to the site of the metal and the symptoms from which the patient suffers. The x-ray localization will often assist the operator in judging of the possible difficulty in removing the metal. Bodies situated above the horizontal plane of the globe or posteriorly in the vitreous chamber are usually caught in the coats of the eye, and in a few days or weeks become firmly bound by inflammatory exudation which resists extraction even with the magnet point brought close to the indicated location. Bodies at the bottom of the vitreous, in the neighborhood of the ciliary body or equator, usually drop into this region after penetrating the anterior segment of the globe, and, not having penetrated the retina or choroid, are more readily secured, even after remaining in the eyeball for a considerable period.

In old cases that will presumably offer difficulties in the extraction of the metal, operative interference may be postponed so long as the eye is quiet. The patient, however, must understand the necessity of promptly seeking advice should inflammatory symptoms arise. If the injured eyeball is irritable, or sympathetic irritation exists, an attempt should be made at once to extract the metal, and in the event of failure the ball should be enucleated without delay.

EYEBALLS SAVED.

In the first series of cases, extraction was successful and the eyeballs were saved in 30 cases, 7 with vision better than 6/12, 4 between 6/15 and 6/60; 9 with good light projection; 6 with light perception, and 4 with slightly shrunken eyeballs. In the present series, extraction was successful in 100 cases, with vision better than 6/12 in 20, between 6/15 and 6/60 in 13, counting fingers or hand movements in 7, good light projection in 27, light perception in 21, no light perception in 6, and eyeballs shrunken in 6. In the total 63 cases with light projection or light perception removal of the cataract would ensure serviceable vision in many of the patients.

A summary of the 106 cases of the present series is given in Table 1. The details of the first series of cases studied have been previously published,* and are therefore not given here.

TABLE 1.—EYEBALLS SAVED.

Case.	Surgeon.	Period Between Injury and Operation.	Period Between Operation and Last Examination.	Vision.	Remarks.
111	Love	1 day.	1 mo.	Good proj.	Cataract.
118	Schwenk	7 days	4 yr.	6/9	“
162	Ziegler	3 days	1 “	No l. p.	Ball shrunken.
182	de Schweinitz	8 mo.	2 mo.	6/6	Aphakia.
260	Zentmayer	7 wk.	2 “	6/9	“
337	Sweet	15 yr.	1 yr.	Good proj.	Cataract.
368	Sweet	1 day.	2 mo.	“ “	Cap. cataract.
386	Hansell	1 day.	4 “	6/60	“ “
388	Posey	1 day.	1 “	Good proj.	Cataract.
	POSTERIOR CHAMBER:				
159	Risley	4 wk.	3 mo.	6/9	
166	Posey	3 “	3 “	5/25	
227	Van Pelt	2 “	2 yr.	Good proj	Cataract.
195	Harlan	4 days	3 “	6/9	
	CILIARY REGION:				
119	Risley	2 days	4 yr.	Good proj.	Cap. cataract.
125	Oliver	35 “	2 mo.	5/10	
126	McClure	3 “	4 yr.	No l. p.	Eye slightly shrunk'n.
135	Thomson	7 yr.	3 mo.	No l. p.	“ “ “
151	Radcliffe	2 “	4 yr.	No l. p.	Eye normal size.
167	de Schweinitz	2 mo.	4 mo.	6/5	
217	Thomson	10 days	5 “	Good proj.	Cataract.
223	McClure	3 “	1 “	L. p.	“
248	Oliver	5 “	2 yr.	Fingers 9'	“
255	Sweet	1 day.	2 “	6/9	Aphakia.
257	Hansell	15 mo.	2 “	No l. p.	Eye normal size.
261	Ziegler	3 days	2 “	Fingers 3'	Cataract
268	Ziegler	5 mo.	18 mo.	Good proj.	“
285	Sweet	3 hr.	2 yr.	6/6	
300	McClure	2 days	5 mo.	6/22	
326	Posey	2 “	1 “	6/9	
334	Ziegler	8 yr.	....	....	Opt. ciliary neurect. Extraction failed
365	Oliver	6 mo.	6 mo.	Imp. l. p.	Eye shrunken bef. ex.
369	McClure	18 “	4 “	No l. p.	Eye slightly shrunk'n.
370	Risley	3 wk.	3 “	Good proj.	Capsular cataract.
398	Oliver	8 days	1 “	6/9	
	EQUATOR:				
107	Schwenk	13 days	5 yr.	No l. p.	Eye slightly shrunk'n
117	Oliver	13 “	....	5/20	Extraction failed
120	Ellegood	7 “	7 wk.	6/60	
139	Sweet	7 “	2 yr.	Fingers 5'	Part. ret. detach.
141	Ellegood	4 “	1 mo.	Fingers 3'	Cap. cataract.
145	Posey	1 “	6 “	6/22	Part. ret. detach.
152	McClure	7 “	3 “	Good proj.	Aphakia.
155	Murdock	3 “	1 “	“ “	Cataract.
157	de Schweinitz	2 hr.	1 “	6/6	“
163	Sweet	9 mo.	3 yr.	6/6	
165	de Schweinitz	5 wk.	1 mo.	Fingers	Body loose in vit.
168	Oliver	6 days	3 yr.	6/30	Large ret. det. bef. ex.
171	McClure	1 wk.	6 wk.	L. p.	Cap. opacities.
176	de Schweinitz	6 mo.	3 yr.	Fingers 2'	
178	Fisher	2 days	2 “	L. p.	Chor. degeneration.
179	Randolph	2 wk.	3 “	Good proj.	
183	Harlan	4 days	3 “	6/6 partly	

---

* Transactions American Oph. Society, 1901.

TABLE 1.—EYEBALLS SAVED (Continued).

Case.	Surgeon.	Period Between Injury and Operation.	Period Between Operation and Last Examination.	Vision. o	Remarks.
185	Harian	1 "	6 mo.	L. p.	Pupil occluded.
193	Harlan	3 "	1 wk.	Good proj.	Cataract.
198	Parker	2 "	3 yr.	5/9	Isol opac. of lens.
205	Radcliffe	1 mo.	1 "	Good proj.	Cataract.
210	McClure	1 "	......	......	Extraction failed
215	de Schweinitz	3 "	2 days	L. p.	Cataract.
228	Risley	5 days	1 mo.	H'nd move	
229	Sweet	2 "	4 "	L. p.	
232	McClure	3 "	3 yr.	6/60	Cap. opacities.
241	Fisher	3 "	2 "	Good proj.	Cataract.
244	McClure	2 "	2 "	" "	"
251	Hansell	3 mo.	3 mo.	" "	"
258	Oliver	2 days	2 yr.	No l. p.	Eye slightly shrunk'n.
265	Oliver	2 wk.	2 mo.	5/20	
267	Risley	3 "	......	......	Extraction failed
270	Risley	6 "	1 mo.	L p.	Eye slightly shrunk'n.
278	Sweet	6 "	1 yr.	5/20	Cap. opacity.
302	Schwenk	3 days	1 "	Good proj.	Cataract.
304	Ziegler	7 mo.	18 mo.	L. p.	Ret. dt. bef. oper.
306	Schwenk	2 days	1 yr.	6/15	
309	Sweet	1 mo.	3 mo.	Imp. l. p.	" " " "
819	Radcliffe	4 days	14 "	6/6	Aphakia.
339	Fisher	12 "	1 yr.	6/30	"
348	Fisher	1 "	1 mo.	6/9	
351	Risley	6 "	1 "	Good proj.	Cataract.
361	Sweet	4 "	1 yr.	" "	"
382	McClure	4 "	4 mo.	6/15	Cap. opacity.
385	Sweet	21 yr.	6 "	No l. p.	Eye normal size.
387	Ziegler	4 days	......	......	Extraction failed
394	Fisher	2 "	3 "	L. p.	Eyeball irritable.
391	Ziegler	9 yr.	3 mo.	No l. p.	Eye normal size.
414	Sweet	2 days	1 "	Imp. l. p.	Vitreous opac.
	POSTERIOR PART OF GLOBE:				
116	Zentmayer	3 days	1 mo.	Good proj.	Cataract.
121	Risley	7 "	2 "	" "	Part. cataract.
122	Thomson	2 "	4 yr.	6/6	
128	Schwenk	3 mo.	4 "	Imp. l. p.	Part. ret. detach.
134	McClure	15 days	2 mo.	L p.	Vitreous opacities.
233	Zentmayer	1 "	3 yr.	L. p.	Cataract.
237	Risley	2 wk.	3 "	6/12	
239	Oliver	4 days	......	......	Extraction failed.
245	McClure	4 "	3 mo.	L. p.	Cataract.
252	Posey	2 "	1 "	L p.	
254	Posey	2 wk.	2 "	L. p.	
295	Risley	1 "	2 "	Good proj.	Cataract.
305	Harlan	1 mo.	3 "	No l. p.	Normal size eye.
310	Sweet	6 days	2 "	Imp l. p.	Cataract.
317	Ziegler	2 mo.	2 "		
318	Sweet	13 days	1 yr.	Good proj.	"
336	Schwenk	12 "	1 mo.	" "	"
375	McClure	2 "	2 "	6/60	Vitreous opacities.
348	Fisher	1 "	1 "	5/9	
351	Risley	6 "	3 "	L. p.	Cataract.
379	Posey	10 mo.	5 "	Good proj.	"
393	Van Pelt	2 "	3 "	" "	"
407	Oliver	5 "	1 "	No l. p.	Degener. vitreous.

An analysis of the visual results in the patients that have been under observation for a period of years, in which a scleral incision was made in the extraction of the metal, indicates that retinal detachment following this method of procedure must be of rare occurrence. In not one of the cases in the tabular statement in which the media permit a study of the region of the incision made in the ocular structures has detachment of the retina occurred, although in many of the patients a sufficient period has elapsed to exclude further retinal or choroidal changes. The continued irritation and exudative inflammation of a long retained foreign body in the coats of the eye is probably a more potent factor in causing detachment of the retina than a small, clean cut of the sclera and the adjacent retina and choroid.

In several of the tabulated cases retinal detachment was present prior to extraction of the metal, and in many eyeballs with only light perception the retina is likewise detached, but it is difficult to say whether the presence of the foreign body or the insertion of the magnet point in the removal of the body was the primary cause of the detachment.

EYEBALLS LOST.

In the first series of cases. 22 eyeballs were lost, in 7 of which the injury was by non-magnetic bodies. In 9 cases extraction was not attempted; 3 cases were injuries from steel, and 6 from copper or small shot. In 5 cases extraction failed, and on enucleation, the metal in the eyeball was found firmly embedded in new fibrous tissue. In 8 cases the body was successfully removed, but enucleation was required in 5 cases because of iridocyclitis, in 2 cases from recurring hemorrhages into the vitreous, and one from panophthalmitis.

In the present series, 45 eyeballs were lost, in 35 of which the injury was from iron or steel, 6 from shot and 4 from copper. In 12 cases no attempt was made to extract the metal; in 7 cases extraction failed, while in 26 the body was successfully removed. In 8, evidences of panophthalmitis was present at the time of examination, and in 2 the ball was immediately removed, in 5 on the following day, and in 1 on the ninth day; in the other 18, the magnet point was inserted into the vitreous in nearly every instance, increasing thereby the traumatism, and probably in a large measure contributing to the iridocyclitis that compelled ultimate enucleation. In a number of these cases the body had remained in the eyeball a sufficient time to render the saving of the globe problematical, even in the event of successful extraction. The period between injury and operation in the 18 cases was three days in 3 cases; four days in 1; five days in 2; seven days in 1; fourteen days in 1; sixteen days in 1; twenty-four days in 1; four weeks in 2; five weeks in 2; and the remaining 4 cases, six months, eight months, eighteen months and thirteen years, respectively.

TABLE 2.—EYEBALLS LOST.

Case.	Time Between Injury and Operation.	Time Between Extraction and Enucleation.	Cause of Loss of Eye.	Size of Body in mm.
	LENS:			
115	1 day	1 day	Panophthalmitis.	3 x 1
	CILIARY REGION:			
146	3 days	5 months	Iridocyclitis	1.5 x 1
153	7 "	1 month	" "	8 x 5
235	6 months	3 months	Rec. hem. ant. chamb.	4 x 2
312*	2 days	Ext. failed	Sympathet. irritation	7 x 2
313	16 "	1 month	Iridocyclitis	10 x 7
	EQUATOR:			
130	2 weeks	23 days	Iridocyclitis	6 x 4
154	5 "	1 month	Shrunken and tender.	12 x 6
160	5 days	4 months	Iridocyclitis	3 x 1
173	4 weeks	6 weeks	" "	4 x 1
184	8 months	1 month	" "	3 x 2
186†	3 "	Ext. not tried	Shrunken and tender.	
187†	1 month	" " "	Sympathet. irritation	
234	10 days	Same day	Panophthalmitis.	5 x 1
240	1 day	" "	" "	3 x 4
272	13 years	3 weeks	Iridocyclitis	3 x 1
298	1 week	Ext not tried	" "	7 x 3
315	1 week	" " "	" "	4 x 2
333	1 day	1 day	Panophthalmitis	3 x 2
402	1 "	Ext. not tried	" "	1 x 0.5
415†	9 days	" " "	Iridocyclitis	
	POSTERIOR:			
109	2 months	Ext. failed	Iridocyclitis	1 x ¼
113	3 weeks	" "	" " 4 yr. later	5 x 4
131	3 days	Same day	Panophthalmitis	4 x 2
158	2 weeks	Ext. failed	Iridocyclitis	2 x 1
161	5 "	1 month	Shrunken and tender.	13 x 6
185	3 days	6 months	Iridocyclitis	6 x 2
197†	2 "	Ext. not tried	" "	
200	4 "	2 months	" "	4 x 2
207	3 "	1 day	Panophthalmitis	14 x 1
211	4 weeks	1 year	Iridocyclitis	3 x 2
230*	3 "	Ext. not tried	" "	4 x 2
277	6 months	Ext. failed	" "	3 x 2
279	18 "	6 months	Shrunken and tender.	3 x 1
296	3 days	Same day	Panophthalmitis	4 x 1
331	5 "	21 days	Iridocyclitis	4 x 2
322	4 "	3 "	Panophthalmitis	5 x 1
396†	5 weeks	Ext. not tried	Severe migraine	
401	2 months	" " "	Iridocyclitis	3 x 1
406	3 days	9 days	" "	12 x 9
364	24 days	4 weeks	" "	9 x 2
	ORBIT:			
288*	2 days	Ext. failed	Iridocyclitis	4 x 2
297	7 "	" "	" "	2 x 1
308†	2 "	Ext. not tried	Sympathet. irritation	
352*	8 "	" " "	Iridocyclitis	1 x 0.5

* Copper. † Shot.

A further cause contributing to the loss of the eyeball in a number of the cases was the severe traumatism at the time of injury, the large size of the metal almost immediately destroying the usefulness of the eye. The dimensions of the body in nine cases were as follows: Case 113, 5x4 mm.; case 153, 8x5 mm.; case 154, 12x6 mm.; case 207, 14x1 mm.; case 298, 7x3 mm.; case 313, 10x7 mm.; case 364, 9x2 mm.; and case 406, 12x9 mm.

The summary of the 45 cases in which enucleation was required is given in Table 2.

The comparatively few cases of panophthalmitis, indicate the resisting power of the vitreous to infection. To some extent disinfection of the body may occur as it passes through the coats of the eye into the interior. Even if the instances of late iridocyclitis are considered as types of infection, the percentage of loss from this cause is small in comparison with the large number of cases of injury. Two causes act to produce loss of the ball from iridocyclitis, the formation of a fibrinous exudate about the foreign body that complicates the extraction by the insertion of the point of the magnet once or more into the vitreous, or the original traumatism is so severe that the eye can not recover.

NO BODIES IN THE EYEBALL.

An unusual large proportion of the total number of injuries was shown by the radiographs to have no foreign body in the eyeball or orbit. In each, the diagnosis of the presence of a foreign substance within the ball was probable from the character of the work on which the individual was engaged, the nature of the injury, and the condition of the eyeball or the reduction in vision.

Of the 145 cases embraced in the present series, 30 were seen within 24 hours of injury, 32 between the second and fourth days, 42 between the fifth day and the end of the second week, 27 between one month and nine months, and 14 over one year. In 49 cases cataract existed, 28 in patients examined during the first week after the injury and 21 after this period; in 5 cases hemorrhage into the anterior chamber was associated with a wound of the cornea or limbus; in 8 cases extensive posterior synechia was present, with opacities on the anterior lens capsule; in 13 recent injuries there was hemorrhage or opacities in the vitreous; while in 20 cases of old injury vitreous opacities prevented a view of the eyeground.

Of the total number of injured eyes showing no foreign body, 124 were caused by iron and steel, 10 by copper from premature mining explosions, 7 by glass or stone, and 4 by small shot.

ORBITAL CASES AND CASES UPON WHICH NO OPERATION WAS MADE.

In 20 cases of ocular injury in which the radiographs showed the presence of a foreign body in the eyeball or surrounding structures, no operation on the eyeball was performed, and so far as could be learned, none of these eyes has been removed. Cases in which no operation was performed, but the eyeball enucleated, are included in another part of this report. Of the 20 cases, 4 were foreign bodies in the lens, two of steel and one of copper; 8 were in the vitreous, six of steel and two of small shot; and 8 were in the orbit, three bullets or small shot, four steel, and one stone. In three patients the eyeballs were shrunken and enucleation was advised, but refused.

There is a more general recognition on the part of the attending physicians who are usually first consulted in these ocular injuries from foreign bodies, of the importance of an early diagnosis. A higher percentage of successful extraction, with preservation of vision, would be secured if every case of ocular injury with reduction of visual acuity was subjected to the x-ray examination within a few hours after injury, and the foreign body immediately extracted, should one be shown to have penetrated into the eyeball. Such a course would most largely contribute to the saving of the eyeball and the preservation of some sight, although with the same methods of operation, the same precautions in surgical technic and the same promptness in diagnosis and in extraction, the result in one case may be a shrunken, tender eyeball, that must ultimately be removed, while in another case full acuity of vision will be secured.

SUMMARY.

Total number of injuries from foreign bodies, 420; foreign bodies located in the eyeball, 221; in the orbit, 14; in the eyelid, 3; no bodies shown by the Roentgen rays, 182. Injuries by iron and steel numbered 356; copper, 23; bullets or small shot, 25; and glass, stone, or coal, 16.

In the 221 cases in which the foreign body was located in the eyeball, extraction was successful in 164 cases, with subsequent enucleation in 34; extraction failed in 18 cases, with enucleation in 10, and no attempt was made to remove the body in 39 cases, with enucleation in 19. Although 34 eyes were enucleated after successful extraction of the metal, the majority of these eyes were lost as a result of the original injury and not from the operation. Thus, in 9, evidence of panophthalmitis was present at the time the case was first seen, and in 9 others the large size of the metal inflicting the injury left little hope of saving the eye, while many of the others were old injuries, in which the body was only secured after numerous insertions of the magnet into the vitreous.

The results of operation on the eyeballs containing foreign bodies were: Vision better than 6/12 in 27; between 6/15 and 6/60 in 17; counting fingers or recognition of hand movements, 7; light projection, 36, and light perception 27, with a certainty of increased vision in many of these cases on the removal of the cataract; no light perception, but eyeball of normal size, 6; shrunken eyeball, 10.

CONCLUSIONS.

1. Radiographic examination should be made in every case of ocular injury from a foreign body in which lowered visual acuity is a result of the accident.
2. Extraction of a foreign body through a small meridional incision in the sclera, the magnet point not introduced into the vitreous, causes no greater traumatism than follows drawing the metal through the vitreous into the anterior chamber.
3. Retinal detachment is not a logical result of a scleral incision for the extraction of a body from the vitreous chamber. The exudation associated with a long-retained foreign body is probably a more frequent cause of detachment.
4. Introduction of the magnet point into the vitreous increases the traumatism to the eyeball, encourages retinal detachment and often leads to shrinking of the eyeball and to iridocyclitis.
5. Bodies located above the horizontal plane of the globe or at the posterior part of the vitreous chamber usually present greater difficulties in extraction, owing to the early formation of a fibrous exudate around the imbedded metal, than bodies at the bottom of the vitreous near the equator, to which position they fall after penetration.

DISCUSSION.

Dr. Howard F. Hansell, Philadelphia, declared that the literature of more than 10 years ago, or before the utilization of the *x*-rays and the elaboration of the methods of diagnosis and treatment that have developed since that time, is of historical interest only. The recent extensive literature discusses the subject variously and brings into prominence two opposed opinions—first, that localization is superfluous and second, that localization is essential for scientific therapeutics. The believers in non-localization proceed without delay to the extraction with the Haab or other large magnet, usually through the anterior section of the eye, with consummate skill, drawing the metal around the crystalline lens through the pupil. Those who favor the median-sized magnets prefer localization and subsequent extraction through the cornea of bodies situated in the lens or anterior to it and through an opening in the sclera for those posterior to the lens. Dr. Hansell believes in the latter method for the majority of cases, but he believes also that localization is not indispensable to the successful management of the minority, even when the body can not be seen. For example, a linear wound in the cornea, an opacification in a hitherto clear lens and a blot in the field of vision will indicate that the body is in the vitreous, in the coats of the eye or in the orbit. The precise location in the vitreous is of little moment, for, if it is possible of extraction, the body may be drawn through an opening in the sclera made at any convenient place, usually between the external and inferior rectus. Again, *x*-ray localization presents two drawbacks. Our success in localization, thanks to Dr. Sweet's labors, has made us dependent on the diagnosis of the radiograph and too little stress has been laid on the chances of error. A statement only of the possible inaccuracies may be sufficient to avoid mischief. Dr. Hansell has previously called attention, he said, to the chance of error due to a swollen lens or to a grossly myopic or hyperopic eye, in calculating the exact position of a foreign body. In other words, the comparison of a healthy emmetropic eye with one in which the lens is wounded or which is appreciably larger or smaller, is not accurate. He also said that the foreign body may be so small that the shadow on the radiograph escapes the closest scrutiny. This also is exceptional, having occurred but once in my experience. Dr. Hansell said that it is quite within the limits of good practice to omit the radiographic examination in some cases of ocular injury from a foreign body in which lowered acuity of vision is a result of the accident. The apparatus may not be available and valuable time is lost and danger to the eye incurred by a railroad journey of some hours. The immediate application of the magnet to the unclosed wound will avoid the delay and danger, and will determine both the diagnosis and the cure. He said that it would seem to be a simple matter for a patient to know that the wounded eye needs treatment or that the sound eye is suffering from some of the symptoms of sympathetic inflammation, and yet experience does not prove the assumption. A few weeks ago he removed an eye that had been injured 14 years before and had been blind for almost all that time. There was an uncertain history of the entrance of a foreign body but the retention of that foreign body had not been suspected. The sound eye was beginning to be sympathetically affected. After enucleation a minute fragment of steel was found in the ciliary region, too small to cast a shadow on a skilfully taken radiograph. Dr. Hansell believes that incurably blind eyes, particularly those blinded through injury, should be removed. They are and ever will be useless and are always a menace to the sound eye. Patients who lose their eyes from injury are not as a rule well informed and are not to be trusted to know when treatment is required. This opinion is applicable whether the injury be caused by a substance too large to be retained in the ball or one which may or may not be capable of attraction by the magnet. In cases of recent injuries he agrees with Haab that it is safer to allow non-magnetizable particles to remain in the eye unless they are known to be easily accessible, than to probe the vitreous with forceps or other instruments. He called attention to the excellent results of the operation of extraction as recorded by Sweet, and said that it must be remembered that in comparing these statistics with those of injuries and operation in other parts of the body, recovery is often hopeless from the moment of the accident. Of the 420 cases, the total of both series, the radiograph showed the absence of any foreign body in 182, leaving 232 only to be considered. Of these, 51 recovered vision ranging from 6/6 to counting fingers, 22 per cent. Without extraction of the body it is probable that 99 per cent. would have been lost. Statistics such as these of methods of diagnosis and operation in a comparatively new procedure and concerning which there is a diversity of opinion, are of the greatest value in stimulating other workers to renewed efforts for the saving of the eyes which, without scientific experimentation, would be given up as lost.

Dr. J. Ranly, Cincinnati, said that having been impressed with the occasional failures in the attempts to remove foreign bodies he constructed a stronger magnet, hoping to overcome this difficulty. It is so built that the blunt-pointed pole pieces can be brought within one and one-half inches and turned at any angle desired so that a slanting direction of the magnetic influence can be obtained. By removing the anterior portion of the Haab tip and attaching a flexible extension arm which can be moved with ease in any direction all the advantages of the hand magnet are obtained plus more power. After the foreign body is brought into the anterior chamber he makes a corneal incision at the most favorable place so as to avoid prolapse of the iris, then applies the magnet tip above the foreign body over the cornea and moves it in the direction of the incision. The incision he considers of great importance and thinks that a place should be selected not near the foreign body as we are compelled to do with the weak magnet, but it should be situated at the most distant part, since the foreign body can be moved anywhere in the anterior chamber without causing any injury. The danger of a small corneal incision being much less than that of a scleral incision is a sufficient reason for removing the foreign body in that way, first bringing it into the anterior chamber by means of the giant magnet.

Dr. W. F. Coleman, Chicago, mentioned one point in regard to the magnet that served him excellently and demonstrated his remarks with a diagram on the blackboard. The ordinary Haab magnet has such a large point that in a case some years ago he could not enter it and devised an arrangement with a ball and socket joint, which permits of movement of separate tips in any direction. In removing the foreign body he can not see the reasons for Haab's directions to remove it through the anterior chamber, thus running the risk of producing cataract. In a former statement Dr. Kipp referred to a case in which he had been able to extract a foreign body by reversing the poles. Dr. Coleman does not believe that will practically occur. If one takes a short piece of steel, lays it on a paper and takes a hand magnet and puts one pole toward it and then reverses quickly, either pole will attract the particle and neither pole will repel it.

Dr. Frank C. Todd, Minneapolis, said that the slight improvement in results which Dr. Sweet's statistics show over those of Haab, seem to him to result from more careful localization of the foreign body by radiographs, which he understands Dr. Haab has not employed. Since hearing Dr. Haab's paper on his work in the extraction of foreign bodies, Dr. Todd has practiced the method and has been surprised at the ease and success with which it could be carried out. It seems to him to have certain advantages, in many cases, over removal through the sclera, particularly when the body can not be observed. By Haab's method, it is brought to the edge of the lens, back of the iris (after which, the entire process can be observed), then coaxed to the pupil and out into the anterior chamber, to be removed at the corneal margin through an incision. Dr. Todd has secured the effect brought about by Dr. Coleman's attachment by using a steel instrument, one end touching the magnet, the other entering the lips of the wound. It may thus be moved about readily, and the foreign body will become attracted to it.

Dr. S. D. Risley, Philadelphia, stated that he is at one with Dr. Sweet in his conclusions. So far as injuries which result from foreign bodies are concerned Dr. Risley thinks we should distinctly differentiate between those caused by the entrance of the foreign body itself, by its presence in the vitreous chamber, and those which may be caused by efforts for its extraction. In the first place it should be borne in mind that the foreign body is not always clean and to extract it by a method which makes a new path through the vitreous increases the liability of infection, and is not, therefore, a scientific procedure. It should be extracted by the shortest possible path, and after localization we know just which path to choose. The incision should be made with a sharp knife and the conical tip of the magnet should be placed against the lip of the wound and patiently held there until the foreign body presents itself. He regards this as the ideal method since it causes a minimum of traumatism at the hands of the surgeon. We should hold as an aphorism that it is bad surgery to introduce instruments of any kind into the vitreous when it can be avoided. To insert the long strip of magnet deeply into the vitreous is, to his mind, an illogical and certainly a most dangerous procedure, and one which in his experience in the majority of instances has been unnecessary. He mentioned a case seen in consultation in which the foreign body had been located by Dr. Sweet. The surgeon asked Dr. Risley's advice as to the locality for incision and he suggested a point nearest the foreign body as shown by the localization chart, but he disagreed and made the incision on the opposite side of the globe and inserted a long tip so that the foreign body was pulled entirely across the vitreous chamber. As to the question of polarity, Dr. Risley has seen a foreign body, a sliver of bright metal 8 mm. in length, reverse itself, end for end, and then approach the magnet, emerging at the original wound of entrance. It was in the anterior segment of the eye and could be readily seen through the widely dilated pupil.

Dr. Wm. H. Wilder, Chicago, emphasized the matter of radiographs in these cases. He thinks that many of us are prone, as soon as we suspect the presence of a foreign body in the eye, to apply the magnet at once, and it may be in some cases with disastrous results. It is often used in this way to make a diagnosis. He feels sure from experience that this should not be done, and he has seen one or two striking instances in which he was unable to demonstrate the presence of a foreign body. In one case there was a piece of steel as large as the end of a lead pencil. It had penetrated with a remarkably small wound and had pierced the posterior coat of the eye and lodged against the optic nerve. The patient experienced no sensation whatever when the most powerful current was applied. The eye subsequently had to be enucleated. He thinks that in many cases if the surgeons were more careful to obtain a radiograph, and especially by means of some apparatus for localizing the foreign body, there would be less injury to the eye than by at once applying the magnet. He agreed with Dr. Risley that the shortest course that we can have the foreign body pass through is preferable to the method of removing it through the anterior chamber.

Dr. Edward Jackson, Denver, recently saw a case with Dr. Stevens, in which a splinter of steel was seen hanging back of the lens, with a wound of entrance showing in the cornea, anterior capsule and posterior capsule. We extracted the splinter with the Johnson magnet through the sclera and the lens has cleared up completely.

Dr. T. J. McCoy, Los Angeles, stated that during the last ten years he has had charge of five different roads and has had to do with a great many foreign body cases. Because of unprincipled attorneys they have to be extremely careful in the location of foreign bodies and have instituted a system; first the *x*-ray is used; second, the written consent of the patient for removing the body is obtained, because disastrous results may sometimes occur. Without that they will not have anything to do with it. Experience points to the fact that the best results are obtained by making the incision nearest to the location of the foreign body. In one case the accident was due to the explosion of a cartridge at twenty feet distant and the patient was struck in the eye. It was impossible to tell whether the foreign body was there because of the hemorrhage. It was located with the *x*-ray and was removed. In another case in the last three weeks a miner was struck with a stone; it was located with the *x*-ray and removed. In dealing with these cases among these miners, mostly foreigners, the physician must be very careful to secure consent first before operating.

Dr. William M. Sweet, Philadelphia, believes that there is a class of old injuries in which the metal may be allowed to remain so long as it is not causing any symptoms, and the patient understands the importance of prompt treatment in the event of trouble. Patients frequently seek advice for the removal of a traumatic cataract, and are surprised to learn after *x*-ray examination that a foreign body is in the eyeball. An attempt may be made to remove the body with the magnet point placed at the lips of a small incision in the sclera, and in the event of failure the body may be allowed to remain if all reaction following the operation subsides. Numerous insertions of the magnet point into the vitreous in the hope of securing the body from the firm exudate in which it is possibly imbedded may ultimately succeed in removing the metal. Dr. Sweet would rather leave a piece of steel in the eyeball than a piece of copper. He thinks that the tabular statement of the eyeballs least worthy of study, as it indicates in each instance the cause of failure to preserve the globe. A certain number of eyes had to be removed because of the severe traumatism from a large-sized foreign body, but the larger proportion were lost from delay on the part of the attending physician in recognizing the possibility of a foreign body having lodged in the ball. If these cases were seen earlier the results of operation would be more favorable. In compiling the summary of the tabular statements no figures were presented of the results achieved by other operators, since it is practically impossible to draw satisfactory conclusions in comparing groups of cases which involve so many factors that affect the ultimate saving of the eyeball or the preservation of sight. Apart from the fact that the cases summarized cover the experience of many different operators, some of whom adhere to the plan of inserting the magnet point into the vitreous in recent cases, the ultimate results of operation are further influenced by the size of the foreign body, its position in the eye, and time elapsing between the injury and extraction. If we compare the 182 cases in this report in which extraction was attempted with the 165 cases reported by Haab, Dr. Sweet said, we have the following: Extraction successful, Haab, 141 cases, or 85.5 per cent.; this report, 164 cases, or 90.1 per cent. Extraction failed, Haab, 24 cases, or 14.5 per cent.; this report, 18 cases, or 9.9 per cent. Eyeballs requiring enucleation, including only cases in which extraction was attempted, and was successful or failed, Haab, 39 eyes, or 23.5 per cent.; this report, 44 eyes, or 24.2 per cent. Good sight, Haab, 51 cases, or 30.9 per cent.; this report, 44 cases, or 24.2 per cent. Light perception or projection, which could probably be improved to serviceable vision in a large proportion of the cases by the removal of the existing cataract, Haab, 20 cases, or 12.1 per cent.; this report, 70 cases, or 38.4 per cent. Sightless eyeballs, Haab, 19, or 11.5 per cent.; this report, 16 cases, or 8.8 per cent. Extraction failed, but eyeballs not removed, Haab, 12 cases, or 7.5 per cent.; this report, 8 cases, or 4.4 per cent. In de Schweinitz's report of 26 cases, the results were as follows: Good sight, 10 cases, or 38 per cent.; eyeballs lost, 8, or 30.8 per cent.; eyeballs saved, which probably could have been improved by subsequent operation, 6, or 23 per cent.; eyeballs saved, but ball somewhat shrunken, 2 cases, or 7.7 per cent.

Clinical Notes, New Instruments, Etc.

A NEW SHIELD FOR USE IN NOSE AND THROAT EXAMINATIONS.

I. J. KERR, B.S., M.D.
Physician to the Tuberculosis Dispensary.
CLEVELAND, OHIO.

One of the greatest dangers to the physician handling patients suffering from tuberculosis lies in having masses of muco-pus thrown into his face by the patient sneezing or coughing while the nose, pharynx or larynx is being examined. The greatest danger exists in the public clinics where the patients are not over-particular to restrain a desire to cough while being examined. These patients are also apt to have very irritable throats which render them more liable to cough while the tongue depressor or the laryngoscope is being used.

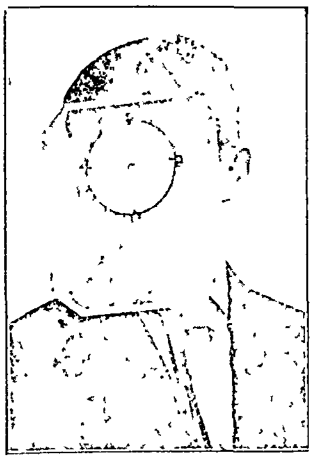
So far as I know, a glass in metal frame suspended on a movable arm between the face of the patient and the face of the physician is the only device which has been used to protect the physician up to this time. This is certainly a great protection, but it has many obvious disadvantages, among which are the clouding of the glass by the breath of the patient and physician, and its size and position.

During a recent visit to the New York Municipal Clinic for Tuberculosis, Dr. Waters, chief of the clinic, showed me a celluloid shield which had been made for him, but which was not satisfactory and did not seem to me practical. It was simply a sheet of celluloid, with temples similar to those used on spectacles, fastened to the sides, the idea being to wear this shield under the head mirror.

DESCRIPTION OF SHIELD.

I have thought out and had made for me the following device which seems to me satisfactory in most particulars:

It is of celluloid, which, of course, is inflammable if held too close to a flame or very hot surface. I have protected it partly from this by binding its surface with thin strips of aluminum. In this form if it is not held within four inches of the top of the gas or oil lamp, directly over the flame, the danger is very slight, as I have proved by tests. Even if the shield is brought directly in contact with the metal condenser on the lamp after it has been burning for some time it does not ignite. If by chance it does ignite it does not burn rapidly enough to expose the wearer to great danger.



I have considered the possibility of making a shield of mica, but in sheets large enough to make such a shield it would be very expensive. Then, too, it is very easily cracked or splintered, so that it would not be durable. If expense were no object this shield could be made of mica in the same way I have my celluloid shield.

The shield is 7x9 inches and is attached to the posterior surface of the head mirror by four clamps fastened to its surface. A hole is made in the shield in the proper place for the shank of the mirror, and this can be at either side of the center line, according to which side of the light the patient is placed. If the examiner wears glasses a hole may be cut in the shield corresponding to the aperture of the head mirror. The shield may be easily detached from the mirror to be cleaned or disinfected in formalin, or in case the mirror is to be used without the shield.

With good sharp illumination I have no trouble in being able to make the ordinary nose and throat examination while using this shield.

Keenan Building.

A CASE OF POISONING FROM OPIUM OR MORPHIN IN A 7-WEEKS-OLD BABY.

EDWIN OLANDER, M.D.
ST. PAUL, MINN.

On July 6, 1906, I was hastily summoned to see a seven-weeks-old baby whom the mother said was getting blue in the face at times, as if in the last throes of death.

When looking at the child I observed that when it became cyanosed the cyanosis was not caused by a typical convulsion, but rather by embarrassment of respiration. I immediately examined the eyes and found typical pin-point pupils, not reacting to the light. I questioned the mother as to any medicine which had been given, and she brought me a bottle of Jadaway's Elixir for Infants, manufactured by the C. W. Wilson company. The directions read:

A child less than 2 weeks	5- 8 M.
A child 2 to 4 weeks	8-12 M.
A child 4 to 8 weeks	12-18 M.
A child 2 to 4 months	20-30 M.

The mother stated that she had purchased the bottle at a neighboring drugstore, and on the evening of July 5 had given the child five drops for colic. I believe that she had really given this small dose. I knew that I was dealing with a case of opium or morphin poisoning, and told the mother so.

Emetics, high enemas, massage and stimulants were administered, and on the morning of July 7 the child was fully recovered.

The pure food bill which has passed Congress, from a physician's point of view, is many years behind time. We must now see that it is strictly enforced, as it will aid in the prevention of such cases of poisoning as this.

Here a child had been give one-third the dose which the bottle stated could be given and yet suffered severe poisoning from this dangerous preparation.

A CASE OF INTESTINAL OBSTRUCTION.*

FRANK S. HOUGH, M.D.
SIBLEY, IOWA.

I have made no extensive examination of the literature of intestinal obstruction, but from the nature of this case I believe that it is a rare one.

History.—Mrs. A., aged 30, married one year, was operated on by me two years ago for destructive disease of the appendages. Nine years ago she suffered from pus tubes and general pelvic inflammation. Both ovaries were mere sacs filled with soft necrotic material, and all the other evidences of long-continued inflammations were present. She was a physical wreck. For about a year she suffered severely from the artificially-induced menopause; after that she commenced to put on flesh and became, apparently, the picture of health.

Present Illness.—On the evening of May 9, she partook liberally of sauerkraut. Se returned home and retired with a feeling of well being. Some hours later, after midnight, her husband saw that she seemed ill, as she was groaning and rolling about though still asleep. He aroused her and she said that she had great abdominal pain; the abdomen was found to be swollen. Soon she commenced to vomit and the pain increased in severity. I was summoned some time later and was loth to diagnose obstruction because one classical symptom, the element of shock (as registered by pulse, temperature and skin) was wanting. The patient vomited incessantly for sixteen hours.

Treatment.—I made many unsuccessful attempts to pass a long colon tube, but at last my efforts were rewarded by such an immense discharge of gas and feces that I thought, and told the family, that things were now all right. The pain and vomiting stopped for an hour and then the same symptoms returned and I found that I had only emptied the colon and that the small intestine was still enormously distended. I suspected volvulus near the lower end of the cecum.

Operation.—An eight-inch incision was made through the right rectus and was followed by evisceration of practically all the ileum, which was greatly distended and cyanotic. Not having a Paul's tube or other similar contrivance, multiple incisions were made in the bowel which allowed of evacuation of contents. The emptied bowel was sutured and returned. The cecum was located and an effort was made to elevate it and the adjacent ileum but it could not be done. The constriction could be felt, however, and a distended black loop of bowel was fished up. A white glistening cord was apparently tied around it. This cord was round, about three inches in length and the size of one's little finger, resembling somewhat a thick fibrous appendix. The herniated loop could not be extricated until the cord was exsected. By the application of hot wet compresses the strangulated bowel changed in color from black to rosy red, and no portion of the bowel was removed as its mesentery seemed all right and it had resumed a contracted natural appearance.

---

* Abbreviated from a paper read before the Upper Des Moines Medical Association, Spirit Lake, Iowa, July 11, 1906.

Result.—The patient did not vomit after the operation and on the second day she commenced to pass large quantities of liquid feces. The abdomen flattened and became normally tympanitic. Her recovery was rapid. She required cascara and epsom salts almost daily for two or three weeks before the bowels regained a normal condition.

The condition was of the nature of an intra-abdominal strangulated hernia. This cord was attached at one end to the bowel wall furthest from the mesenteric attachment, and to the adjoining mesentery near the bowel, so that a ring existed whose circumference was cord, bowel and mesentery. The diameter of this ring was one and one-half inches. This old adhesion was about six inches proximal to ileocecal valve, and on inspection another one almost identical in appearance was found a few inches proximal to that which was exsected to prevent subsequent trouble. These bands were undoubtedly the vestiges of her peritoneal inflammations years ago, and were there when I operated on her pelvic organs two years ago, but no search was made in this region at that time. She might have carried them around with her for years without suffering any inconvenience had not an unaccustomed dinner, and perhaps more especially the sauerkraut, excited violent peristalsis, and the ileum being thrown into violent action became strangulated by this band.

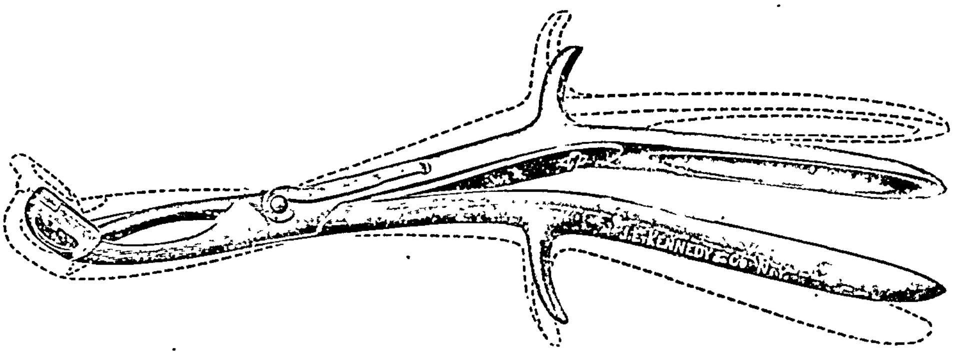
Strangulated herniæ through the omentum, diaphragm and mesentery are not very rare. Adhesions often bind the bowels together and cause obstruction, and adhesions do the same by crossing the intestine. Such a case as this seems to me to be very rare. Had operation been delayed longer her chances would have been small, and my delay was due to the fact that I was unable to reconcile an unaffected pulse of 75, warm extremities, natural skin and no apparent depreciation of strength with volvulus or other form of obstruction, in spite of the distension, pain and vomiting.

A NEW ADENATOME.

GEORGE B. McAULIFFE, M.D.
Chief of Clinic and Clinical Instructor, Department of Otology,
Cornell University Medical College, Chief of Clinic, Aural
Department, New York Polyclinic Hospital.
NEW YORK.

While many surgeons maintain that forceps are unnecessary in adenoidectomy, experience has proved to others that a radical operation is much better accomplished by the use of the forceps, followed by the curette. The majority of forceps are modifications of the Lowenberg model, two spoons, grasping the mass between them. No instrument has hitherto been designed (except Concannon's) that prevents the wounding of the anterior boundaries of the pharynx and of the uvula. While the majority of operators are expert enough to avoid these accidents, nevertheless these mishaps are reported often enough to merit attention to this defect in the design of the instruments. Some operators, like Myles, use the finger to prevent the inclusion of the uvula. That the probability of accident hampers the freedom and quickness of the adenoidectomy is without doubt.

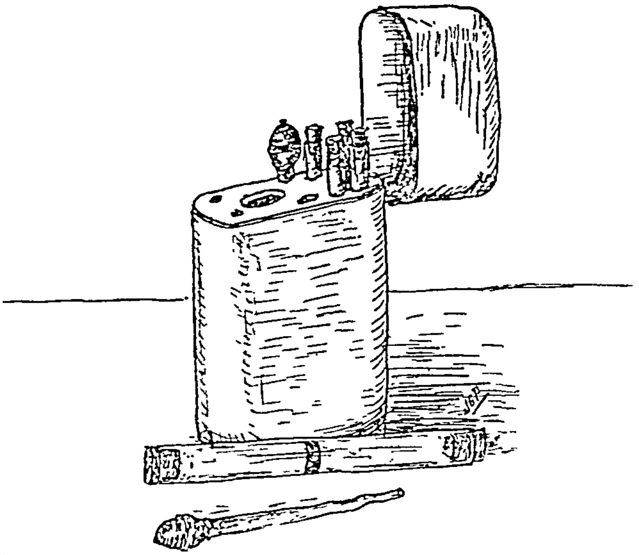
The instrument shown here meets the difficulty by hinging the cutting blades where they come in contact with the anterior boundaries of the epipharynx. The uvula can not get in the way and the attention of the operator can be centered on the adenoids, which fall easily in the jaws of the instrument. Besides, the economy of motion in the opening of the blades to their full sweep makes the manipulation of the instrument very easy. The addition of the obstetric prongs enables forward pressure to be made against the adenoids. Despite the multiplicity of parts the instrument is sterilizable; and the separability of the cutting blades from the handles permits of the use of different sizes of cutting blades on the same handles. I am indebted to Mr. J. Kennedy for many practical suggestions.



AN IMPROVISED POCKET CASE FOR EYE DROPPERS.

J. G. PARSONS, M.D.
BROOKINGS, S. D.

Feeling the inconvenience of carrying a bag to hold dropper bottles when making a visit to eye patients, I have improvised a pocket case which will, in a measure, serve the oculist as the tablet case does the general practician. As may be seen in the picture, the case is an aluminum hypodermic case. Four of the tablet vials are used to hold solutions. Two droppers, one amber for atropin, are made by drawing out tablet vials in an alcohol flame. In the mouths of the droppers are fitted rubber bulbs from vaccine tubes, the perforations being closed with bits of rubber. The syringe hole carries a tube which may be used for another solution, or, as shown in the cut, an open tube, plugged in the middle with a cork, may be used to hold two kinds of powder.



THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price.........Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, SEPTEMBER 8, 1906.

THE AMERICAN MEDICAL ASSOCIATION: ITS FRIENDS AND ITS ENEMIES.

During the first fifty-five years of its existence, lack of effective organization and of sufficient funds prevented the American Medical Association from undertaking to carry out certain objects that from time to time have been emphasized as advisable for the good of the profession. During this time the work of the Association along these lines was limited to the occasional adoption of resolutions, or to the appointment of committees which could do little but make recommendations. In 1902 the feeling which had been growing that a closer and more effective organization was required resulted in the adjustment of the principles of medical organization to present-day conditions, and in a most remarkable organization movement on the part of an awakening profession. At the same time, careful, conservative management on the part of the Board of Trustees, combined with the application of modern business methods to the conduct of the affairs of the Association, finally resulted in the accumulation of a surplus.

Thus with the necessary means and a compact organization the Association, for the first time in its history, was in a position to take up work that heretofore had been out of the question. For instance, the House of Delegates in the last three years has established the Council on Pharmacy and Chemistry and the Council on Medical Education, and has ordered the compilation and publication of a national medical directory. The objects of these three movements are the same: the accumulation of facts and the publication of the truth regarding matters of direct interest and importance to the medical profession. The Council on Pharmacy and Chemistry was created to investigate proprietary preparations and to inform the profession regarding them; the Council on Medical Education was established to coöperate with licensing boards and with medical colleges for the purpose of improving medical education and of bringing about practical methods of reciprocity in licensure, in other words, to advance the cause of a higher standard of medical education; the directory was established with the object of presenting to the profession the official facts regarding every practicing physician.

These objects are altruistic in every sense of the word and are for the betterment of conditions affecting both the medical profession and the public at large. In this work the Association should receive the support of every honest man, whether layman or physician. And yet opposition has arisen! Who are the men and what are the interests that are seeking by indirect methods, by misrepresentation and personal attack, to obstruct and to nullify the work of the Association? In the answer to this question will be found the key to the entire matter.

This opposition, apparently widespread and diverse. will, when analyzed, be found to come from four different sources. These are: 1. The Proprietary Association of America, which, it will be remembered, circulated most malicious and libelous attacks on the American Medical Association, sending these to the newspapers all over the country, and which in other ways did all it could to create a public sentiment against the Association. This was because the American Medical Association lent its influence and support to the efforts that were being made to enlighten the public regarding the frauds that were being perpetrated on it by the "patent medicine" men. 2. The so-called "ethical" proprietary medicine men, whose products or methods would not bear investigation. 3. Those privately-owned medical journals which were more or less dependent on the income received from the above. 4. The firm owning and publishing a medical directory.

It was foreseen from the beginning that the most bitter and persistent opposition would come from those who would least relish a comparison of the claims they made in their advertising and the goods they sold; whose stock in trade consisted of alluring advertisements rather than of meritorious products. These expectations have been realized.

It is in some respects an amusing matter to note the marked change that has taken place in the views of certain commercial interests regarding the Association. So long as it was without capital, so long as its activities were necessarily limited to the passing of resolutions, so long as the Association did nothing—so long was it lauded and praised as a great and beneficent body. But mark the sudden change. No sooner were active measures inaugurated for the betterment of existing conditions and for the correction of evils long known and recognized than the Association was assailed, its officers were attacked and their motives impugned for doing exactly what they had been instructed to do by those representing the profession. Caricature, ridicule, invective, misrepresentation, half statements and distortions of the truth have all been utilized to check the work of the Association.

Failing in these attacks from without, however, and finding the Association at Boston more harmonious and more united than ever before, an attempt is now being made to disrupt the Association and to nullify its work by creating dissensions and suspicion in the Association itself. In this attempt to create discord have been engaged not only the elements and influences noted above, but also, to their shame be it said, medical journals which for years have claimed a place in the very van of medical progress, and whose standing was such as to warrant the belief that they would not stoop to print deliberate and malicious falsehoods. One of these journals, whose columns in the past have been kept filled by contributions from the most prominent members of the body which is now being attacked, whose publishers for years have derived large revenues from our profession, has seen fit to follow the lead of the weak, subsidized journals in this attempt to disrupt an organization of those who have contributed to the success of the publication and who have made the fortunes of its owners possible. Incidentally it may be noted that among all the slurs and attacks made on the Association and its officers there have been no definite, tangible accusations, no specific statements, but, on the contrary, insinuations, vague generalizations and indefinite hints of alleged or assumed mismanagement.

To these attacks so far no reply has been made, because the officers have continually been assured by the friends of the organization that the source and the animus of these assaults were fully apparent to all, and because they deemed the work in which the Association was engaged of too great importance to waste time or effort in defense. Possibly no explanations are needed now, but when members of the Association of years' standing, men like Dr. Carstens, whose sincerity, honesty and loyalty to the Association are beyond suspicion, write letters and ask questions which show plainly that they have been misled and have accepted as facts the vague statements and indefinite insinuations made by those who are interested in creating dissatisfaction and suspicion, and when falsehoods and malicious misrepresentations are being circulated by journals hitherto of good repute and standing, then it is evident that the time has come to state some plain truths in order that the members of the profession may know the facts. Neither the Association nor any of its officers have anything to fear from full and complete publicity of all facts relating to the work that is being done or to any of the affairs of the Association. As a matter of fact, full and complete publicity has always been made regarding everything concerning the Association. No board of directors has ever presented to its stockholders a more complete or detailed account of affairs than has the Board of Trustees to the members of the American Medical Association relative to the affairs of the Association. There has been nothing to conceal in the past; there is nothing to conceal now. The more the profession and the public know of the work of the Association the more heartily will they support it.

We propose, therefore, to discuss in the immediate future the various phases of the work of the Association and the reasons for the opposition to it. Part of this matter we shall discuss editorially, but the greater portion, however, will be found under the head of "Pharmacology," a department of The Journal which has contained the matter that has stirred up nine-tenths of the opposition, as our readers well know.

HEART BLOCK.

One of the most interesting discussions during the recent meeting of the British Medical Association at Toronto was that on heart block in the Section on Medicine. The term is probably not familiar to most ordinary practitioners of medicine, and the idea which it conveys has really only been introduced into medical science in the last few years. The idea intended by the term is that heart impulses which begin in the auricle do not succeed in passing over into the ventricle because they are blocked in their progress. This "heart block" is due to the fact that a particular bundle of muscle fibers through which the heart impulses are conducted has its function interfered with by some pathologic or traumatic condition and thus prevents the passage of these impulses. The result, as expressed in the picturesque language of Professor Gibson, of Edinburgh, is a divorce between the auricles and the ventricles. Instead of following the auricular beat immediately, the ventricular beat is distinctly delayed or is even suppressed entirely for one or more impulses, the consequence being a distinct irregularity in the heart rhythm.

The ideas which underlie this new theory, for it must not be forgotten that it is not as yet beyond the theoretic stage in spite of the gradual accumulation of considerable pathologic evidence in its favor, began to be evolved about a decade ago. Professor His, the distinguished German anatomist, described a special bundle of muscle fibers which, having their origin in the auricle, pass through the auriculoventricular junction to be distributed in the ventricular septum and in the walls of the ventricles. This bundle of muscle is quite distinct from the neighboring muscular fibers. It has an enveloping connective tissue sheath of its own and is surrounded by a network of nerve fibrils. Its color is even a little different from that of the adjoining tissues, being somewhat paler, and, indeed, this pallor has sometimes been considered to indicate a pathologic condition in the heart muscle and has been pointed out as an evidence of degeneration.

As stated by Professor Aschoff, of Berne, the old idea that heart weakness is the result of a general inflammatory disturbance of the heart muscle, a myocarditis, consequent on the presence of infectious elements in the circulation, has not been sustained by the more careful investigations of recent years. Certain infectious diseases always produce inflammatory changes in the myocardium. These are the exception, however, rather than the rule. Diphtheria nearly always produces such changes. Rheumatism, meaning, of course, acute rheumatic arthritis, has a specific effect on the heart muscle and gives rise to certain small pathologic lesions situated just below the endocardium which resemble miliary tubercles in many respects. Beyond these two infections, however, none of this class of diseases has a serious effect on the heart. The old idea of a generalized inflammatory disturbance of the heart muscle is not substantiated. The examination of over 100 hearts with all the modern staining methods and careful microscopical technic has failed to show it. It has been found, however, that in cases where heart failure threatened or actually occurred the essential affection is limited to this bundle of muscle fibers which, because of its discoverer, has been called the bundle of His. In a word, according to Professor Aschoff, an entirely new chapter in cardiac pathology is about to be opened up in the study of this structure and its lesions.

Not a little of the experimental work which demonstrates the truth of these pathologic ideas has been done here in America. Professor Erlanger, of Johns Hopkins, has shown that compression of the bundle of His can, in varying degrees, produce all forms of disturbance of the heart rhythm, even the most serious, and can eventually lead to a fatal termination. The pathologic ideas are also confirmed from the clinical standpoint by a number of English and American observers. Many of the puzzling forms of arrhythmia of the heart, which have so often proved insoluble problems to clinical observers, find a comparatively ready explanation by this new theory. Even the curious set of phenomena known as the Stokes-Adams syndrome, in which there is extreme irregularity of the pulse with stoppage of the heart sometimes that lasts for half a minute or even longer and then gradual resumption of the slow rhythm, and which the hearts of patients suffering from this disorder so frequently exhibit, can be rather readily explained on the score of inflammatory conditions seriously interfering with the conduction of impulses which originate regularly in the auricle, but fail to reach the ventricle because of the heart block that exists.

Sir James Barr emphasized the fact that this as yet remains only a theory, and brought out especially that the question of the conduction of impulses through a muscle band which itself does not contract is a new idea in medicine. There seems to be no doubt that the enthusiasm over recent discoveries has led some of the pathologists and clinicians to minimize the objections to the theory. It is probable that nervous impulses will yet be found to play a rôle coördinate with those which are supposed to be stopped in the bundle of His. In the meantime it is of more than passing interest to realize that something new has arisen in the old field of heart pathology and that the novel theory contains some most suggestive elements which can not fail to help in the understanding of certain cardiac problems, even though eventually it should prove not entirely worthy of acceptance in all the breadth of its present apparent significance.

THE RELATION OF THE MEDICAL EXAMINER TO THE MEDICAL DIRECTOR.

Last week we discussed the relation of the medical examiner to the agent and referred to the fact that many other points remained which it would perhaps be interesting and profitable to take up later.

The relation of the examiner to the home office should be as direct and intimate as possible; the reports should go direct to the home office without passing through the hands of the agent, and any correspondence in reference to cases should be addressed directly to the examiner. Should he be negligent in his duties in any way, the proper remedy lies not in any means of coercion by the agent or the general agent, but in complaint to the medical director, who alone has power of discipline in his department. In a word, it can not be too strongly emphasized that in a properly conducted company the examiner is an officer of the medical department and amenable solely to the medical director for the conduct of his work.

A more frequent personal contact of the medical directors and examiners would conduce to more cordial relations and greater efficiency. We are aware that the position of medical director of a large company is an exacting one, but the chief person concerned in the selection of risks is the examiner, and the mortality experience of the company must depend almost wholly on the care, the wisdom and the honesty with which he does his work. It seems obvious, therefore, that the personnel of the local examiners is the most vital factor in determining the death rates. The chief duty of the director is his selection of the local examiners and the keeping in touch with them, in so far as possible, by personal contact. The state and county societies furnish a convenient place for such contact, and it seems strange that the medical directors are so seldom seen at these societies, whose members, with few exceptions, constitute the most progressive and capable members of the profession. These meetings also afford an opportunity for conferences of the local examiners of an insurance company, which ought to be held at least annually, preferably at the meetings of the state medical societies, either at some unoccupied hour during the session or on the day preceding or following the regular meeting. If an annual meeting of the agents is of sufficient importance to warrant the payment of their traveling and other expenses and the offering of prizes to the most successful, surely similar meetings of the examiners would conduce to better and more effective work, the results of which would ultimately appear in the mortality experience of the company. At such conferences the scientific aspects of life insurance examining should be discussed and the interest of the examiners aroused and stimulated to work for something beyond the mere fee. Under present conditions it may be safely asserted that the great majority of physicians, even among those who are keenly interested in the scientific side of their clinical work, have little or no interest in life insurance examining beyond the compensation derived from it. This is inevitable so long as they have no means of following their insurance cases and of knowing their ultimate outcome. If each examiner were to keep a careful record, preferably a carbon copy, of every examination, as he keeps a history of his clinical patients, and if then the home office were to inform him of every death among the cases he has recommended, and, when possible, of those whom he has declined, it would be possible for him to develop much the same interest in his insurance as in his clinical work. Only in this way can the best work of the examiner be obtained. The most effective service from a professional or scientific man can never be secured on a purely mercenary basis.

There has been a tendency among the medical directors, especially of the American companies, to exaggerate the importance of what might be called the "clerical" as contrasted with the "judicial" function of the local examiner. In the instructions to examiners great emphasis is laid on the importance of recording all the facts, with the intimation that the medical director will do the rest—will determine, from the mere catalogue of facts as to the family and personal history and physical condition of the applicant, whether or not he is a good risk. The effect of this is to lead the examiner to feel that he has done his full duty when he has perfunctorily recorded the facts called for in the application blank, and that there is little call for the exercise of his judgment as to the rating of the risk. Of course, the actual recording of all the facts is important, but a good-sized book full of such could not enable the medical director, who has never seen the applicant, to judge as accurately of his insurability as a careful examination of the applicant face to face.

QUACK DOCTORS AND QUACKERY.

No articles have appeared that have proved so effective in accomplishing their purpose as have those on "patent medicines" by Samuel Hopkins Adams in *Collier's Weekly*. They set the people to thinking, and that was all that was necessary. The sale of "patent medicines" immediately dropped off, and, in some instances, almost to the vanishing point. This is especially true of such over-advertised frauds as Peruna and Liquozone—the latter, it is stated, being almost wiped out.

Another series of the "Great American Fraud" articles by Adams is now appearing in *Collier's*, this time on "Quacks and Quackery." The first of this series was on "The Miracle Workers;" the second on "The Scavengers," and the third, which has just appeared (September 1), is on "The Specialist Humbug." In this article Adams shows up that prince of humbugs, Oren Oneal, in a way that will open the eyes of the gullible public much more satisfactorily than Oneal himself was ever able to do with his "dissolvent method." Coffee of Des Moines, Powell, Madison and other "eminent" eye and ear quacks are placed in the lime light of publicity and their rascally humbugging methods exposed. Undoubtedly the public will begin to think about the advertising quack and his methods which will result in at least checking his inhumane course. In fact, something has already stirred up the officials of Chicago—where quackery is probably more rampant than in any other city in the world—for the corporation counsel has commenced a crusade against the quacks and fake medical institutions in that city.

Adams points out how to tell whether or not the doctor is a quack: "The advertising doctor who, having a 'cure' to sell, is 'editorially endorsed' by any publication, particularly in the religious field, is a quack. The doctor who advertises secret powers, or newly discovered scientific methods, or vaunts a special 'system' or 'method,' is a quack. The doctor who offers to sell, at a price, a cure for any ailment is a quack, and if he professes a 'special interest' in your case and promises reduced rates, he's throwing in a little extra lying for good measure. Finally, the form-letter is a sure sign. You can tell it because it begins 'Dear Friend,' or 'Dear Mr. So-and-So,' or 'My dear Correspondent,' and contains promises that will fit any case. If, however, you are determined to give a trial to one of these 'specialists,' suggest these terms: that, since he *promises* to cure you, you will deposit to his account the full price of the treatment, to be paid him as soon as you are cured, or substantially benefited, and not before. Then and there negotiations will cease. The promising quack will never stand behind his promises. Through this simple expedient one may guard himself against the whole army of medical scamps, for this is the final test of quackery which none of the ilk can abide."

A feature brought out is that one of the quacks, after expulsion from the American Medical Association, still continued to display in his office his certificate of membership as an index of his good standing. It is certainly gratifying to know that the organization has come to mean so much that even the quack and charlatan strives to take advantage of its prestige for his own purpose. In the meantime it must not be forgotten that these articles in *Collier's* supply an inexhaustible amount of material for the warfare with quackery that will be useful any time during the present generation, not alone against the men who are actually exposed, but also against others whose methods will partake of those which have been so mercilessly shown up on the present occasion.

THE LOURDES PILGRIMAGE.

We have not heard that the annual pilgrimage to Lourdes has been discontinued or materially diminished by the almost unanimous protest of the French physicians. It is a difficult matter to handle, and such religio-medical resorts will probably always be in favor with certain classes, notwithstanding the perils they involve. If faith were the power to control man's physical ailments that some claim it to be, such excursions ought to be conducive to the public health, but it is a simple matter of observation and statistics to prove that they are just the opposite. A few cases may be benefited from the psychologic effect, but a much larger number are likely to be made worse, and the aggregation of disease in such places and in such pilgrimages is a special opportunity for the spread of contagion and infection. One need not accept all that Zola has described to admit this; unless the conditions are controlled absolutely by skilled sanitarians with a free hand, evils are inevitable and the difficulties of correct sanitation are specially aggravated when the conditions are all dominated by an implicit religious faith in a miraculous shrine to which necessary sanitary measures would seem almost necessarily sacrilegious. We have examples enough in this country in the way of Eddyism, Dowieism, etc., of the conflict between unenlightened credulity and necessary health measures. The fact that a large number of Roman Catholic physicians, presumably devout Catholics, in France, have indorsed the protest against the Lourdes pilgrimage shows that an enlightened religious sentiment is not blind to the evils supported by too credulous fellow religionists. It is to be hoped that if this pilgrimage is to continue year after year it will soon come under the control of those who can deprive it as far as possible of its dangers to public health.

RAGWEED EXTERMINATION.

Now that the hay-fever season is well on, it is a little remarkable that more has not been said about the abolition, near human dwellings at least, of the plants that are popularly supposed to be its cause. The proposition is perhaps too large a one, but there are a few plants that are said to be especially responsible and have not the excuse of being redeemably esthetic or otherwise useful. Among these is the ragweed, ridiculously called by the botanists ambrosia or food of the gods, which grows in almost every suburban vacant lot, and the pollen of which reddens the trouser legs of every man who traverses them at this season. If it deserves its popular reputation, it is the chief offender. We would not like to see the golden-rod exterminated, and it has at least the merit of not infesting the closer built up regions of human habitation, but the ragweed is pretty nearly everywhere and thrives in the crowded haunts of man as well as in the truly rural districts. In Ohio it seems they have a law against it as a public nuisance, but, like the edicts against Canada thistles and poison ivy, it probably is very little enforced. It may be impossible to exterminate the weed, but it has as little apparent excuse for its existence as far as usefulness or innocuousness to humanity is concerned as any other species of our flora, whether it is really the cause of hay fever, as it is supposed to be, or not.

TUMORS OF THE BRAIN.

The study of tumors of the brain is of especial importance by reason of the brilliant therapeutic results at times attained by means of both surgical and medicinal measures. Non-malignant intracranial neoplasms are not at all uncommon, and careful scrutiny will often lead to accurate diagnosis at a time sufficiently early to justify hope of recovery as a result of appropriate treatment. Even in cases in which recovery can not be brought about, marked relief, particularly from distressing headache can be afforded. The timely institution of treatment will avert, also, such serious dangers as blindness from optic neuritis. The results of an interesting analysis of seventy cases of brain tumor are presented by Dr. Arthur Conklin Brush[1] in a communication read before a recent meeting of the Medical Association of Greater New York. The patients varied from 6 months to 72 years of age; 60 per cent. of the cases occurred in persons between the ages of 20 and 50 years. and this distribution is attributed to the greater frequency of syphilitic tumors during this period. Almost 60 per cent. of the cases occurred in males. In 75 per cent. no etiologic factor could be ascertained. Five of the growths were tuberculous; six occurred during the presence of active syphilis, recovery taking place under specific treatment; two others were found to be syphilitic at autopsy. In two cases heredity appeared to be an etiologic factor. Unfortunately, the symptoms of cerebral tumor are not prompt in appearance and regular in development. In three cases they covered a period of four, five and ten years, respectively. In only eight was the duration from two to eight weeks, and in four of these the lesion was undoubtedly syphilitic. Convulsive seizures were among the most prominent early symptoms. These were general or local or of the nature of petit mal. Defective vision occurred next in frequency as an early symptom. Other common clinical phenomena were headache, with nausea, vomiting and vertigo, ataxic gait, hemiplegia, dementia. Eighteen of the growths were subcortical; 17 were situated in the motor cortical region, 7 in the basilar ganglia, 6 were basilar, 6 cerebellar, 5 in and about the pons. In 14 cases the new growth was found to be a sarcoma, in 11 syphilitic, in 9 a glioma, in 7 tuberculous, in 4 cystic, in 1 an angioma and in 1 a psammoma. Fourteen patients recovered under medicinal treatment; 19 were improved by surgical means, and 13 died. The only drugs that are known to influence favorably the growth of cerebral tumors are mercury, iodin and arsenic. The fact that improvement follows treatment with mercury and iodids is not conclusive evidence that the growth is syphilitic. When medicinal treatment is not succeeded in a few weeks by definite improvement and the new growth can be localized in an accessible situation, surgical intervention should be resorted to. Even then irremediable damage may already have been done and the operation itself may result in paralytic phenomena. For this reason the importance of early diagnosis and prompt and vigorous treatment must be obvious.

---

[1] Medical Record, Aug. 11, 1906, p. 215; The Journal A. M. A., Aug. 25, p. 630.

THE MINNESOTA HEALTH REGULATIONS.

The laws of Minnesota put the formulation of health rules for the state in the hands of the State Board of Health, and this board has recently published a very complete and elaborate set of regulations, covering nearly all the points of public sanitation. Naturally this has stirred up a little opposition. There are always those who see a restriction of their liberties in salutary regulations. So far as we can see from the copy before us, the rules are reasonable and enforcible, and the fact that their making and interpretation is in the hands of the Board of Health makes it the more easy to abolish or to modify such as experience may show to be impracticable or to work undue hardship to any one. In fact, we believe that the details of such measures should be left as far as possible to an intelligent health board rather than to have them embodied in legislative enactments and only changeable by additional legislation. The rules cover the ground very completely, though we should infer that there are no distilleries in Minnesota, as the possibilities of swill milk seem to have been overlooked. We mention this simply as a suggestion to the Minnesota Board of Health. The State of Minnesota is certainly well off in its health officials.

THE VARIABILITY OF SUPRARENAL PREPARATIONS.

The contribution by Dr. Reid Hunt and the reports of Drs. Sollmann and Brown, appearing in our Pharmacology department this week, represent entirely independent investigations, executed on different animals and by somewhat different methods. They are, however, in striking agreement by showing that the various solutions of suprarenal alkaloids on the market are far from uniform. Hunt's examination demonstrated that to produce equal effects it required of one brand five times as much as of another. Specimens obtained from one manufacturer were of uniformly good quality; one specimen obtained from another manufacturer was good, another from the same firm was inferior, while the products of one of the firms, obtained directly from the company, were uniformly bad. The report of Sollmann and Brown shows that the activity varies commonly from 65 to 100, and one sample was inactive. As pointed out by Sollmann and Brown, these results have a purely negative value; they should not be interpreted as determining the relative value of the various brands, but merely as demonstrating the variability of the products. We feel assured that this is a fault which need only be pointed out to be remedied, and that future examinations will reveal a greater degree of uniformity. It might be regretted that the reports do not mention the names of the preparations, but, under the circumstances, it has been thought best to omit these. The object of the investigation and the publication of the results is not to condemn any firm or any preparation, but to call attention to actual conditions regarding these important remedies. It is believed, too, that the publication of these reports will encourage manufacturers to test and standarize their products more conscientiously so that they may be sure that the claims on the label will be borne out. It is to be hoped that the U. S. Public Health and Marine-Hospital Service may consider it wise to repeat the experiments occasionally and in the future to mention the names of the preparations examined. Similar experimental work has recently been done abroad. Cameron, of Edinburgh, has examined a number of suprarenal preparations on the English market and has found several of the preparations uncertain and variable—the American preparations, however, standing well in the investigation. American firms have taken the lead in the manufacture of preparations of suprarenal active principle, and it is hoped they will strive to keep up the standard and so maintain the lead.

Medical News

ALABAMA.

New Sanitarium.—The new sanitarium of Dr. Miles A. Copeland, near Birmingham, is now open, with accommodations for 12 patients.

Fined for Omission to Report.—Twenty-four warrants against physicians of Birmingham were issued August 16, for failure to submit obstetric reports to the city physician, and several of these physicians were fined $1.00 and warned that in case of future offense a heavier fine would be assessed.

Commends State Authorities.—In a public statement issued August 4, State Health Officer Dr. William H. Sanders, Montgomery, commends the health authorities of New Orleans and Louisiana for the care they are exercising to keep yellow fever out of the country. He states that the candor and honesty of the New Orleans physicians has done much toward allaying public fear in this regard.

Ill and Injured.—Dr. James E. Seay, Pratt City, is recovering from the injuries sustained in an accident on the Frisco railroad in July.——Dr. Wilson L. Heflin, Roanoke, was seized with an attack of vertigo August 2, but is now reported to be improving.——Dr. J. Ross Snyder, Birmingham, who has been suffering from typhoid fever at Hillman Hospital, is convalescent, and has been removed to his home.——Dr. Thomas E. Callan, Scottsboro, has been ill for several days in a hotel at Gadsden.

ARKANSAS.

Personal.—Dr. Arthur G. Harrison, Warren, has been selected by the State Board of Health to succeed John M. Young, Little Rock, as physician to the Arkansas Deaf Mute Institute.——Dr. Jefferson D. Southard, Fort Smith, has been appointed physician of Sebastian County, vice Dr. James W. Breedlove, deceased.——Dr. Arthur C. Jordan, Pine Bluff, fractured a rib and sustained serious contusions in a runaway accident, August 19.

CALIFORNIA.

Smallpox.—The Secretary of the State Board of Health report's isolated cases of smallpox at Red Bluff and Dunsmuir.

Funds for Fever Fight.—The executive committee of the San Francisco Relief Corporation has appropriated $28,000 for the use of the health board in its war against typhoid fever.

College Notes.—The Oakland College of Medicine and Surgery opened for its fifth annual session August 21.——The College of Physicians and Surgeons, San Francisco, is to be rebuilt on Fourteenth street, between Woodward avenue and Jessie street, at a cost of about $50,000.

Tuberculosis Clinic Opened.—A free dispensary for the treatment of tuberculosis, connected with the Medical Department of the University of Southern California, Los Angeles, was opened August 6. The dispensary is under the direction and supervision of Dr. Frances M. Pottenger, medical advisor of the Anti-Tuberculosis League, assisted by Drs. W. Jarvis Barlow, George H. Kress and Sleeper.

Typhoid Fever.—The mysterious disease reported among the Japanese laborers in Pasadena has been pronounced to be "typho-malarial" fever. Two deaths have been reported.——On August 8 three patients with typhoid fever were removed to the hospital from the relief camp, Mariposa. The camp was located next to a pond of stagnant water and had no kitchen.

Personal.—Dr. Fred P. Clark has been elected superintendent of the Stockton State Hospital, vice his father, Dr. Asa Clark, resigned. Dr. Asa Clark will take charge of the sanitarium which has been under the direction of his son at South and Center streets, Stockton.——Dr. Charles C. Falk has been appointed federal quarantine officer for the port of Eureka, vice Dr. Clarence V. Thompson, resigned.

Sanitation Committee Report.—The sanitation committee of the San Francisco grand jury reported that general health conditions throughout the city are good and that the Board of Health has been active and conscientious in its work. The grand jury expresses to the 400 physicians who worked voluntarily in coöperation with the committee during the weeks following the earthquake and fire, the gratitude of the people of San Francisco.

Additional Sanitary Inspectors.—The San Francisco Board of Health, on the recommendation of the county medical society, has appointed the following medical sanitary inspectors: Drs. Herbert Wallen, Paul Castelhun, Philip Collischon, G. O. Culver, Morton R. Gibbons, A. B. McConnell, Harry R. Oliver, Clarence Quinlan, Walter J. Williams, Harry P. Roberts, E. W. Alexander, Frederick G. Canney, Roland E. Hartley, Charles Clark, Chester Harris, and M. McCauney.

Lane Lectures.—The annual course of Lane Medical Lectures was given in Cooper Medical College, San Francisco, by Dr. John McVail, Glasgow, Scotland, on August 20 and the five following days. The general subject of the lectures was "The Prevention of Infectious Diseases," and dealt with the progress of modern sanitary administration with a description of public health organizations of towns and counties, the abolition of typhus fever by sanitation, the results of modern house conditions, and the importance of building regulations. Then were considered in order, plague, typhoid fever, measles, scarlet fever, smallpox, tuberculosis, and finally the general question of the ethics of disease prevention, showing that the result of the advance in sanitation, vaccination, isolation and health effort has been to improve the race physically and morally, and the outcome is most encouraging for the future.

Hospital News.—The president of the University of California has approved the plan of Dr. Arnold A. D'Ancona, dean of the medical department of the institution, and his confrères, of converting the middle building of the affiliated college grounds south of Golden Gate Park, into a modern hospital, having a free clinic. It is estimated that $50,000 will be required to make the necessary changes, and of this amount $20,000 is available at the present time.——Mrs. Sylvester is erecting a large sanitarium on Wyandotte ranch, near Chico.——Dr. Thomas J. Randall, Los Angeles, turned the first spadeful of earth for the foundation excavation of the new Sunset Hospital, August 13.

COLORADO.

July Deaths.—During July 799 deaths were reported in the state, equivalent to an annual mortality of 14.16 per 1,000. Of the deaths 19 were caused by typhoid fever, 5 by diphtheria and 4 by scarlet fever, and 33 stillbirths were reported.

Dr. Keith Convalescent.—Dr. John G. Keith, Leadville, who has been suffering from complete paralysis as the result of a lightning stroke last May and has been under treatment at St. Luke's Hospital, Denver, has returned to his home convalescent.

Communicable Diseases.—During July 173 cases of typhoid fever were reported in the state, 105 cases of scarlet fever, 31 cases of diphtheria, and 30 of smallpox. As compared with the previous month, there was a decrease of 5 cases of diphtheria, 3 of scarlet fever, 35 cases of smallpox, and an increase of 110 cases of typhoid fever.

DISTRICT OF COLUMBIA.

Communicable Diseases.—A slight increase occurred during the week in diphtheria; scarlet fever showed a decrease of four cases; typhoid fever continued to increase, there being 74 new cases reported and only 35 discharges, 4 of which were by death, leaving 296 under treatment at the close of the week, as compared with 257 at the close of the preceding week.

Mortality for the Week.—The mortality of the week ended August 18, when compared with the record of the previous week of 1905, shows a gratifying improvement, there being only 103 deaths as compared with 136 during the week ended August 11, and 107 during the same week of 1905. Of the decedent 63 were white and 40 colored, which represents the following death rates per 1,000, per annum: White, 14.1; colored, 21.9; and, total population, 16.4. The principal causes of death were diarrheal diseases, 14; consumption, 13; disease of the heart and cancer, each 5; typhoid fever, 4; and cerebral hemorrhage, bronchitis and meningitis, each 2.

ILLINOIS.

Personal.—Dr. Albert S. Wall, Champaign, has returned after four months in Europe.——Dr. Lewis H. Skaggs, Ellsworth, was overcome by the heat, August 23, but is improving.

Training School at State Hospital.—Dr. Vaclav H. Podstata, superintendent of the Illinois Northern Hospital for the Insane, Elgin, announces the opening of a training school for attendants and nurses on October 1. The school will have a three-years' course and the attendants will be given more time off duty and the hours in various quarters will be shortened.

Advocate Septic Tank.—As the result of a conference held between the Secretary and Assistant Secretary of the State Board of Health and the directors of the State Board of Water Survey, Urbana will probably have in a short time a modern septic tank for the purpose of demonstrating to the officials of the various municipalities the advantages of this method of sewage disposal.

Consumption Camp Started.—The members of the Chicago Tuberculosis Institute have perfected plans for the erection at Dunning of portable houses for patients suffering from tuberculosis, who will be given treatment at the new camp which is now being established. The houses consist of dormitories, 26 by 44 feet, and include two porches, a kitchen and a dining-room. Three of the cottages are now ready and the camp, with accommodations for 20 to 30 patients, will probably be opened this week.

Communicable Diseases.—Typhoid fever is reported to be prevalent in Alton and the necessity of boiling all drinking water is urged.——Joliet reports four cases of scarlet fever.——Diphtheria has been prevalent in Brereton, and the situation is being investigated by an official of the State Board of Health, who recommended that every house in which there had been a case of diphtheria should be properly disinfected and fumigated, and that all clothes and wearing apparel should be disinfected. He ordered the two families at present under quarantine to be released and the houses fumigated.

Chicago.

College Commencement.—The twelfth annual commencement exercises of Illinois Medical College were held August 23, when degrees were conferred on a class of fifty by Dr. Heman H. Brown, president of the college.

Offers School for Deaf.—Comptroller McGann has received an offer from a woman philanthropist to erect a school for the blind on the Gage farm. The donor proposes to make the school sectarian and expects to put up a building to cost about $50,000.

Typhoid Fever in Rogers Park.—The Health Department has discovered 6 cases of typhoid fever, one of which was fatal, between Morton street and Touhy avenue, Rogers Park. In this location the residents have no city water service, and are obliged to depend on well water or purchased water for drinking or household purposes.

INDIANA.

To Teach the People.—Dr. William J. Scott, Kokomo, health officer of Howard County, has been authorized by the Board of County Commissioners to have printed for distribution 2,000 pamphlets treating of consumption and typhoid fever, and the best methods of prevention and treatment of these diseases.

Personal.—Dr. and Mrs. Albert E. Bulson, Fort Wayne, have returned from a three months' trip abroad.——Dr. Charles E. Grayston, Huntington, has been appointed district optician and oculist for the Erie railroad.——Dr. Anna M. Lemon Griffin, formerly a practitioner of Muncie, has been sent to the State Hospital at Logansport by the authorities of Kokomo. She is believed to be temporarily deranged.——Dr. Charles H. Eckert, Marion, was operated on at Fort Wayne, August 22.——Dr. J. Robert Norrel, Richmond, has been elected secretary of the local board of health to fill the unexpired term of Dr. T. Henry Davis, formerly secretary, and at present president of the State Board of Health, resigned.

Communicable Diseases.—The Secretary of the Kendallville Board of Health reports that only two cases of smallpox have developed in that place this summer and anticipates no further trouble. The quarantine has been lifted.——There are about fifteen cases of smallpox in Peru, two of which are in South Peru, and quarantine is in force.——At Hoagland there is reported to be six cases of diphtheria with one death, and the county health officer has quarantined the homes in which the cases were found.——Columbia City has a number of cases of typhoid fever and the city water is being analyzed.——An epidemic of typhoid fever is said to be existing at Russiaville, where 20 cases have already developed. The health authorities have decided the disease was due to the use of inferior and polluted drinking water.

Slaughter-House Regulations.—The State Board of Health has drawn up an ordinance for the control of slaughter-houses, butcher shops, meat and fish markets, and public eating-houses, providing that the animals butchered shall be absolutely sound; that the slaughter-houses shall be made and kept sanitary, and that the offal shall be tanked, cremated, or buried; that cold storage facilities must be provided; that employés must be clean as to personal habits and clothing; that the slaughter-houses shall be provided with ample lavatory facilities; that swine must not be fed on offal; and that meats shipped from other states shall be accepted if the place of preparation is inspected. The regulations for butcher shops, meat and fish markets provide that they shall be screened from May 1 to November 1, and that plants and tools shall be kept clean. The regulations for the public eating houses provide that they shall be kept clean, well lighted and sanitary; that the tables, linen, dishes, utensils, etc., shall be kept thoroughly cleansed; that all employés shall be personally clean and shall wear clean clothing; that all waste water shall be removed and placed in proper receptacles; that all cellars and storage places for vegetables and meats shall be thoroughly disinfected whenever required, and shall be kept clean and free from all decaying matter. Rats, mice, and other vermin shall be excluded from all storage places. All hotels, inns, taverns, boarding-houses and eating-houses shall be subject to public inspection at any and all times.

IOWA.

Personal.—Dr. Frank D. Ayres, Sabula, suffered some severe burns on the face and eyes by the explosion of a gas generator at his residence, August 6.——Dr. Peter H. Schroeder, Traer, sailed for Europe August 25, on the *Philadelphia*.——Dr. Howard E. Campbell, Anita, is seriously ill with heat exhaustion.

Medical Society Meeting.—Botna Valley Medical Society held its annual meeting in Atlantic August 13 and decided to meet in 1907 at Avoca. The following officers were elected: Dr. George A. Spalding, Avoca, president; Dr. Thomas B. Morris, Atlantic, vice-president; Dr. Augustine Grant, Minden, secretary (re-elected); Dr. Harry D. Spencer, Oakland, treasurer; and Drs. William F. Graham, Athens, George A. Cassidy, Shelby, and Harry D. Spencer, Oakland, censors.

State Board Elected.—At the annual meeting of the State Board of Health, July 23, Dr. Fred W. Powers, was elected president and Dr. Josiah F. Kennedy re-elected secretary. Prof. Henry Albert, Iowa City, was elected director of the state laboratory of bacteriology and bacteriologist of Iowa, and Prof. C. W. Kinney, Des Moines, was elected chemist of the board. On the re-election of the secretary, he tendered his resignation, to take effect Jan. 31, 1907. His resignation was accepted and Dr. Louis A. Thomas, Red Oak, was elected to the position and authorized to assume his duties Feb. 1, 1907.

KANSAS.

Infectious Diseases.—The city sanitary department of Topeka reports under quarantine 7 cases of typhoid fever and one case of scarlet fever.

Epidemic of Dysentery.—It is reported that an epidemic of dysentery is afflicting the country north and west of De Soto. Seven deaths have occurred in the last ten days.

Contract Let for Medical Building.—The administration building of the Eleanor Taylor Bell Memorial, the Rosedale adjunct to the Kansas University Medical School, for which the contract has been let, it is said, will cost $100,000, with equipment, and is to be ready for occupancy this fall. The general hospital, the first of the series, is practically completed at a cost of $30,000.

Sanitary Laws Must Be Enforced.—Dr. S. J. Crumbine, secretary of the State Board of Health, is endeavoring to enforce the laws concerning sanitary conditions of the state. He recently issued orders for the fumigation of every schoolhouse in the state during the vacation period. In reply to a letter from a county attorney as to what he should do about it if the order were disobeyed, Dr. Crumbine gave the following citation from the general statutes: "The health officers of the several local boards throughout the state shall perform such duties as this act, the local board of health, or the State Board of Health, shall require. For any failure or neglect of said officer to perform any of the duties prescribed in this act, he shall, on conviction thereof, be fined $10 for each and every offense."

KENTUCKY.

Tuberculosis Hospital to be Built.—The Louisville city council has agreed that immediate steps must be taken to provide temporary quarters at the present city hospital, Louisville, to accommodate the tuberculosis patients. It is proposed to put up a building to cost about $3,000.

Typhoid Fever.—An epidemic of "typho-malarial" fever is said to be raging at Farmer; 25 cases are said to exist and 3 deaths are reported.——The State Board of Health has issued circulars containing directions for the prevention and care of typhoid fever.——An epidemic of typhoid fever is reported at Midland City in the eastern part of Bath County; 30 cases have been reported and several deaths have occurred.

Personal.—Dr. Florence Meder, third assistant physician at the Western Kentucky Hospital for the Insane, Hopkinsville, has accepted a similar position at the Eastern Kentucky Hospital for the Insane, Lexington, and will assume her new duties September 1.——Dr. Malcolm H. Yeaman, Lakeland, has, it is reported, *decided to resign as superintendent of the* Central Kentucky Hospital for the Insane.——Dr. Meverell K. Allen, health officer of Louisville, who has been in Europe since June, returned August 16.——Dr. Llewellyn P. Spears has succeeded Dr. James W. Guest as physician for the eastern district of Louisville.——Dr. A. D. Park, Lakeport, who has been seriously ill with typhoid fever, is convalescent.

LOUISIANA.

Consolidations.—Arrangements for the consolidation of the Tulane University of Louisiana Medical Department and the New Orleans Polyclinic were consummated, August 30, at the meeting of the Board of Administrators of the Tulane Fund. The Polyclinic will thus become the postgraduate department of the college.

The New Iberia Case of Yellow Fever.—The one case of yellow fever at New Iberia, 125 miles from New Orleans, is still a mystery. The patient, a mulatto boy 12 years of age, has apparently recovered from the disease. The physicians agree that the case was unmistakably one of yellow fever, but thus far they have been unable to determine the source of the infection. Thorough fumigation and disinfection of the town has been carried out by the State Board of Health, and no other cases are expected to occur.

MASSACHUSETTS.

Outdoor Treatment for Tuberculosis.—The State Tuberculosis Commission will, it is reported, recommend to the legislature a campaign in every slum and tenement district of the state, to apply the home cure and outdoor sleeping for the treatment of tuberculosis.

Personal.—Dr. Charles S. Millet, Brockton, has been appointed secretary of the State Tuberculosis Commission.——Dr. J. F. A. Adams has been appointed chairman and Dr. John P. Rand, Monson, secretary of the trustees of the Massachusetts State Sanatorium for the Treatment of Tuberculosis, Rutland.——Under the new state law, which came into operation September 1, Dr. John H. Bannon has been appointed school physician for Lawrence.

Dedication of the New Harvard Medical School.—The dedicatory exercises of the new Harvard medical buildings will occur September 25-26. On Tuesday afternoon the dedicatory exercises will be held at the new buildings, followed by an afternoon tea. In the evening a reception will be given by the alumni and the officers of the Harvard Alumni Association at the Boston Medical Library. On Wednesday morning there will be literary exercises and the conferring of honorary degrees at Sandars' Theater, Cambridge, followed by informal reunions of the medical classes. In the afternoon the triennial banquet of the Harvard Medical Alumni Association and invited guests will be held at Memorial Hall.

MICHIGAN.

Capital Stock Increased.—The Grand Rapids Medical College Equipment Company, owners of the Grand Rapids Medical College, have increased their capital stock from $5,000 to $15,000.

Carstens for Mayor.—Dr. J. Henry Carstens has announced himself as a candidate for mayor of Detroit on the Republican ticket. His platform he announces to be opposition to the eighteen-year franchises proposed for the Detroit Union Railway and reduction in street-car fares. He believes that the people are entitled to a lower rate than six tickets for a quarter.

Personal.—Drs. G. E. Stripp and Henry B. Carey of the attending staff of the Michigan State Hospital for the Insane, Kalamazoo, have resigned, Dr. Stripp to practice medicine in the state and Dr. Carey to accept a chair in a California college.——Dr. George R. Pray, Jackson, physician to the State Prison, was brutally assaulted August 14.——Dr. Henry M. Leach, Saginaw, while returning from Bridgeport, was thrown from his buggy in a collision and was rendered unconscious. He is now reported to be improving.

July Mortality.—During July, 2,779 deaths were reported to the department of state, an increase of 29 over the preceding month and 279 over the corresponding month of 1905. This mortality is equivalent to an annual death rate of 12.7 per 1,000. Of the decedents, 627 were infants under 1 year of age and 678 individuals aged 65 years and over. Diarrheal diseases of infants caused 259 deaths; accidents and violence 222, of which 50 were from drowning; tuberculosis, 220; cancer, 147; pneumonia, 84; whooping cough, 43; typhoid fever, 33; meningitis, 27; measles, 23; diphtheria, 22, and scarlet fever, 14. During the month 3 deaths occurred from lightning. Tetanus was given as the cause of 10 deaths, in 2 of which the fatal result was due to the careless handling of explosives.

Wayne County in Line.—The secretary of the Wayne County Medical Society has issued a pamphlet to call the attention of the physicians of Wayne County who are not members of the local organization to the advantages now offered to its members by the society, and to secure the interest and support of all practitioners of medicine in the completion and perfection of the organization of the profession and of the county. For the annual dues of $4 the following advantages are now offered: 1. Membership in the Wayne County Medical Society. 2. Membership in the Michigan State Medical Socity. 3. The Journal of the Michigan State Medical Society. 4. Privileges of medical defense. 5. Eligibility to membership in the American Medical Association. 6. The advantages to be derived from the completion of medical societies in Wayne County.

Communicable Diseases.—The health officer of Cadillac says that he has 80 lumbermen quarantined in a lumber camp in Henderson County on account of diphtheria. Several cases have been found and one camp has been converted into an isolation hospital.——Typhoid fever is epidemic in Three Oaks, 21 cases have been reported, with 1 death, and 3 patients are reported to be in critical condition. On examination of the standpipe which supplies the town with water, the decomposing bodies of hundreds of young sparrows were found in the water. The standpipe was emptied and is to be cleaned.——Traverse City reports 15 cases of typhoid fever.——Mass City and Greenland, Ontonagon County, are suffering from an epidemic of typhoid fever. There have been 35 cases reported, with 5 deaths.——Several cases of typhoid fever, traceable directly to the milk supply, are reported from Allegan.

MINNESOTA.

Buried with Full Military Honors.—All the officers of the First Infantry N. G., Minnesota, and the Minneapolis companies of the regiment met at the armory August 21 and marched to Lakewood Cemetery, headed by the First Regiment band, and there buried Dr. Reynaldo Juan Fitzgerald, with full military honors. The active pallbearers were officers of the regiment.

Sanatoria in Rochester.—Patients for St. Mary's Hospital are coming in such numbers as to overtax its capacity. To relieve the congestion, two sanatoria are now in process of construction, the first under the charge of Dr. John E. Crewe, who has purchased the E. A. Knowlton residence, and is fitting it up at an expense of about $40,000, and the second is being built by Mrs. Charles E. Chute, which will contain about 35 rooms, involving an outlay of about $10,000.

License Revoked.—The State Board of Medical Examiners has revoked the license of Dr. Van Damme, Minneapolis, convicted of illegal practice.——Dr. Theron H. Bly, who is serving a sentence in the state prison at Stillwater, has been notified that his case is pending, and tnat the revocation of his license will be voted on at the next meeting of the board to be held about October 1. The board is unanimously in favor of revoking the license of every practitioner against whom a case can be proved.

MISSOURI.

Busy Year for Ambulances.—The ambulances of the health department of St. Louis during the last fiscal year made 10,759 calls, covering a distance of 54,749 miles.

May or May Not be Vaccinated.—In Kansas City this year for the first time the schools will admit pupils whose arms do not show the marks of successful vaccination. Six months ago the council passed an ordinance leaving it optional whether or not the residents of the city shall be vaccinated.

Diseases and Deaths in St. Louis.—During the week ended August 20 there were 215 deaths in St. Louis, an increase of 31 as compared with the preceding week. Gastrointestinal diseases caused 24 deaths; consumption and circulatory diseases, each 23; accidents, including violence, 16; cancer, 13, and marasmus and inanition, each 11.

Asylum Changes to be Made.—At a meeting of the Board of Public Improvements, St. Louis, at which the health commissioner and superintendent of the insane asylum were present, plans were made for the improvement of the asylum under the appropriation recently made. It was decided that provision should be made for 1,600 or 2,000 new patients and that the patients should be housed in groups of 40 each, with one attendant allowed for every 10 patients. For the violent insane a separate building is to be erected to accommodate 160. All the buildings will be provided with offices and sleeping rooms for at least one physician and two or three attendants. A separate residence building is to be erected on the asylum grounds for the superintendent and a separate building also for the accommodation of attendants and outside help. The present asylum building, designed to accommodate 400 patients, now contains 640.

Tuberculosis by Districts.—Statistics have been compiled by the clerk of the St. Louis board of health, showing the number of cases of tuberculosis and the deaths from that disease in each of the seven sanitary districts. The third district, located east of Jefferson Avenue and between Franklin and Chouteau avenues, shows a greater aggregation of cases and deaths than any other district. In the first district, with a population of 77,075, there were 243 cases and 182 deaths; in the second, with a population of 98,336, there were 249 cases and 178 deaths; in the third, with a population of 68,159, there were 267 cases and 190 deaths; in the fourth, with a population of 119,056, there were 264 cases and 183 deaths; in the fifth, with a population of 77,522, there were 192 cases and 130 deaths; in the sixth, with a population of 130,975, there were 271 cases and 187 deaths, and in the seventh, with a population of 123,895, there were 260 cases and 162 deaths.

NEW HAMPSHIRE.

Food Adulteration.—The State Board of Health reported recently that as a result of an examination of 408 samples of prepared foods, 186 were found adulterated, misbranded or below standard.

Donation to Hospital.—Mr. J. J. Glessner of Chicago and Mrs. Garrett A. Hobart of New Jersey, widow of the late Vice-President, have each subscribed $5,000 for the new hospital at Littleton.

Polluted Well Causes Typhoid Fever.—There is an epidemic of typhoid fever in West Canaan. Thirty cases have been traced to the public well and an analysis of the water showed that it was badly polluted. The well has been closed.

NEW YORK.

Typhoid Fever from Bad Wells.—As a result of drinking from polluted wells, five cases of typhoid fever are reported from West Lyons, one of which has resulted fatally.

Did Not Discontinue Practice.—A. Arthur Huntley, Cuylerville, who was charged with illegal practice of medicine on the ground that he had not passed the state board examination, was arrested for a second time on account of his failure to discontinue practice and had his preliminary examination before the police authorities of Geneseo, was bonded for $500, and was held to the Livingston County grand jury.

New York City.

Much Trachoma.—The commissioner general of immigration reports that during the last 60 days 10 persons, on an average, afflicted with trachoma, were deported from New York City each day.

Personal.—Dr. William S. Bainbridge has been elected adjutant professor of surgery and has been assigned to one of the clinics in that department in the New York Policlinic Medical School and Hospital.——Dr. John Warren sailed on the *Lucania* for Liverpool, last week.——Dr. Louis L. Seaman has returned from his trip to East and South Africa.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended August 25, 589 cases of tuberculosis and 151 deaths; 158 cases of diphtheria and 14 deaths; 101 cases of typhoid fever and 22 deaths; 51 cases of measles and 7 deaths; 46 cases of scarlet fever and 1 death; 27 cases of whooping cough and 8 deaths; 9 cases of cerebrospinal meningitis and 10 deaths; 3 cases of smallpox and 4 cases of varicella, a total of 988 cases with 213 deaths.

Favor Removal of Isolation Hospital.—The comptroller is in sympathy with the department of health and the citizens who advocate the removal of the hospital for contagious diseases from Kingston Avenue, Brooklyn, to Barren Island or some other suitable location.——The board of health has applied for an additional appropriation of $325,000 more for a diphtheria pavilion and this will come up for consideration before the board of estimates in September.

Vital Statistics.—The department of health reports that 18,928 deaths occurred during the quarter ending June 30, or 632 more than were reported for the corresponding quarter of 1905. The respective annual death rates are 18.29 and 18.25 per 1,000. During the same period there were 25.692 births. Tuberculosis claimed 2,653; pneumonia, 1,527, and violence, 1,223, including 67 homicides and 191 suicides. Of children under 5 years of age 6.237 died. During the year 8.967 deaths occurred in tenements, 6,362 in institutions and 2,936 in dwellings.

New Officers for Health Department.—The following officers have been suggested by the acting medical officer of the department and approved and appropriations made by the board of estimates: Chief clerk, with a salary of $4,000; medical inspector, $2,100; two sanitary inspectors, $2,100 and $3,000, and inspector of food in charge of corps, $2,550. Five clerks, two chemists, a laboratory assistant and several other minor appointments were also provided for. The board has asked for an automobile, to cost not more than $3,000, for the use of the assistant sanitary superintendent of the borough of Manhattan. The board of aldermen has been requested to allow the department this automobile.

NORTH CAROLINA.

Medical Department Opens.—The medical department of Wake Forest College opened August 29, and reports an encouraging outlook for a successful year.

Hospital Completed.—The hospital connected with the Wake Forest College is almost completed and will soon be available for the use of students and private patients.

Personal.—Dr. Lewis M. Gaines has returned to Wake Forest College from his vacation.——Dr. Watson S. Rankin of the medical faculty of Wake Forest College, who has spent the summer in Boston, has returned.

OHIO.

Typhoid Fever in Toledo.—Twenty cases of typhoid fever are reported in Toledo in the territory bounded by Cherry and Grange streets.

Physicians Do Not Report Births.—As the result of the failure on the part of the Cleveland physicians to report the births, only 261 were reported for the year ended March 31, 1906. The penalty for failure to make reports has never been enforced, it is said.

Gift to Library.—It is reported by the Associated Press, Cincinnati, that General E. P. Walker, recently deceased, bequeathed to the Lloyd library, Cincinnati, his entire library and collection of manuscripts, and has in addition given a fund of $30.000 to be devoted to the securing of qualified experts to make original investigations in the practice of medicine and pharmacy and a study of the specifications of medicine. The restriction in this direction is that the researches are not to be confined to the theoretic side of medicine.

Personal.—Dr. Robert W. Purdy, Bradyville, is reported to be seriously ill with brain disease.——Dr. William Brundage has been made assistant physician to the Columbus State Hospital, vice Dr. William Richardson, resigned.——Dr. E. H. Rorick, superintendent of the State Institution for the Feeble-Minded, Columbus, sailed for Europe August 11.——Dr. Mark Millikin has been re-elected health officer of Hamilton, and Drs. Linus H. French, Clyde W. Hodges and John A. Burnett, district physicians.——Dr. Francis M. Fitton was appointed to fill the position of health officer until the return of Dr. Millikin, who is now in Colorado for his health.——Dr. Thomas C. Parks, Akron, has been appointed a member of the board of censors of Starling Medical College, Columbus.——Dr. John H. Lowman, Cleveland, who was operated on for appendicitis a few weeks ago, is convalescent and has been removed to his summer home.——Dr. Myron S. Clark, Youngstown, has been appointed pension examiner, vice Dr. Albert L. King, deceased.

Faculty Changes at Starling.—The Starling Medical College opens for the fall term September 13. The following changes in the faculty are announced: Dr. Starling Loving, dean, resigned, and Dr. Charles S. Hamilton, elected in his place; Dr. Frank Winders, registrar, vice Dr. Curtis C. Howard; Dr. D. Tod Gilliam was made emeritus professor of gynecology, and Dr. Earl M Gilliam advanced to the chair of gynecology; Dr Isaac B. Harris, professor of physical diagnosis; Dr. Frank Winders, professor of applied therapeutics; Dr. Harry W. Whitaker, associate professor of theory and practice to succeed Dr. John H. Upham, promoted to associate professor of therapeutics and practice of medicine; Dr. Starling Loving, clinical professor of theory and practice of medicine; Dr. Joseph H. Jones, associate professor of materia medica; Prof. Clair A. Dye, lecturer on materia medica; Dr. Sylvester J. Goodman, assistant to the chair of operative and clinical surgery; Dr. Wells H. Teachnor, assistant to the chair of obstetrics, and Dr. P. D. Shriner, clinical demonstrator in obstetrics.

PENNSYLVANIA.

To Prevent Spread of Whooping Cough.—State Health Commissioner Dixon has ordered the placarding of houses in which whooping cough exists, the placards stating, "All persons are notified of the presence of this disease and are warned of the danger of visiting or coming in contact with those suffering from it."

Warning to Hotel Stewards.—A special agent sent by the state dairy and food commissioner attended the meeting of the International Association of Hotel and Club Stewards, in session at Niagara Falls this week. With the agent were sent 75 samples of adulterated foods collected by the department agents throughout the state. The object was to warn the stewards against purchasing adulterated foods for use in hotels and clubs.

Personal.—Dr. Fred E. Kress has been made physician of the Lilly, board of health.——Dr. William N. Stein has been reelected president of the Shenandoah board of health.——Dr. Gustav T. Fox and family, Bath, have sailed for Europe.——Dr. Thomas N. McKee, Kittanning, is suffering from an infected wound of the foot.——Dr. Oscar Lindenmuth, Ringtown, has been placed in charge of the *x*-ray department of the Indiana State University, Indianapolis.——Dr. Calvin H. Elliott, Harrisburg, who was operated on for appendicitis at the Medico-Chirurgical Hospital, Philadelphia, August 6, is rapidly improving.

Hospital News.—After five years of agitation and controversy, it has finally been decided that Pittsburg is to have a United States Marine Hospital on the old arsenal site at Thirty-ninth Street and Penn Avenue.——The directors of the Washington City Hospital Association have decided on the location for a new hospital at the corner of Donnan Avenue and Second Street. The new building is expected to cost about $25,000.——The Alfred O. Deshong sanitary cottage for the treatment of patients suffering from tuberculosis or other communicable diseases originating in the Chester Hospital, has been turned over to the latter institution. The cottage was built and donated by Alfred O. Deshong, Chester.——A new hospital is to be established at Siverly.

Typhoid Epidemic.—An epidemic of typhoid is said to exist in Freedom township, where three deaths have already occurred.——Five cases of typhoid fever are reported in one family at Hatboro.——Typhoid cases have greatly increased in McKeesport during the last few days.——Oakmont reports 30 cases of typhoid fever and Verona 40 cases.——Pittsfield has 7 cases of typhoid. reported to have been imported from Atlantic City, N. J.——The alarming condition of the typhoid situation in Pittsburg is evidenced by the posting of warnings against the drinking of unboiled water.——Typhoid fever has broken out at Berwyn and Devon, 18 cases of the disease existing at

written had a record of only 3,715, of whom 2,377 are males and 1,338 females. The leper problem is stated to be far from an unsatisfactory solution. The new colony which was opened at Culio (see The Journal, July 28, 1906, page 283), will be the beginning of a new order of things in the care of these unfortunates. A number of pictures illustrating the work of the bureau of health forms an interesting addition to the book. Among them are pictures of the board of health ambulance, the old buildings of the San Lazaro Leper Hospi- tal at Cebu and the present leper hospital, the Sampaloc Hos- pital at Manila, a group of American sanitary inspectors and one of assistant inspectors and sanitary police, a board of health station in the San Nicolas district, Manila; types of the Filipino, Spanish and American houses in Manila; the Nipa district, the municipal slaughter house and St. Paul's Hospital, Manila. There are numerous illustrations of other points of interest in and around Manila and in other parts of the islands.

CANADA.

Ontario Association Election.—The annual meeting of the Ontario Medical Association was held in Toronto August 20. After a short executive session the officers were re-elected and it was decided to meet in Toronto in 1907. Dr. George A. Bingham, Toronto, was re-elected president, and Dr. Charles P. Lusk, Toronto, secretary.

McGill University to Honor British Doctors.—Sir Thomas Barlow, Bart., F.R.S.; Sir William Broadbent, Bart., F.R.S.; Sir Victor Horsley, F.R.S., and Dr. T. Clifford Allbutt, F.R.S., have been recommended by the board of governors of McGill University to receive the honorary degree of LL.D. of that institution. The degrees will probably be presented *in absentia* at the next convocation.

Montreal's Annual Medical Report.—According to the annual report of the medical health officer, Dr. L. Laberge, Montreal, for the year 1905, the average death rate of the city per 1,000 of the population was 20.6. This was 0.2 less than in 1904. The birth rate was 0.15 per 1,000 higher than in 1904. The average of births for a period of 19 years has been 37.92 per 1,000. The birth rate in Montreal is higher than in Toronto by 13.81 per 1,000. The marriages in Montreal in 1905 were 10.31 per 1,000, which is an increase of 0.10 over 1904.

Canadian Medical Protective Association.—That this society is progressing very favorably was shown by the annual report of its president, Dr. R. W. Powell, Ottawa, at the annual meeting in Toronto, August 20. He stated that it has now a membership of about 450, has never lost a case it has undertaken to defend, is sound financially and promises to do a great deal of good for the Canadian medical profession. Dr. R. W. Powell, Ottawa, was re-elected president, and Dr. Fenton Argue, Ottawa, secretary-treasurer in the place of Dr. J. A. Grant, Jr., Ottawa, resigned.

Canada Association Meeting.—The thirty-ninth annual meeting of the Canadian Medical Association, held in Toronto August 20, was only an executive session, owing to the meeting of the British Medical Association. The attendance was about 75, and the chief item of business was the reception of the report of the committee on reorganization, which was presented by the chairman, Mr. I. H. Cameron. The report took the form of a proposed new constitution and by-laws patterned somewhat after the constitutions of the American Medical Association and the British Medical Association. After some discussion it was decided that the subject should be thoroughly dealt with next year. Montreal was selected as the place of meeting in 1907. Dr. A. McPhedran, Toronto, was re-elected president; Dr. H. B. Small, Ottawa, was re-elected treasurer, and Dr. George Elliott, Toronto, was re-elected general secretary.

FOREIGN.

Pettenkofer Prize Awarded to Schaudinn.—The prize of $300 from the Pettenkofer endowment at Munich has been awarded to the recently deceased Fritz Schaudinn for his discovery of the spirochete of syphilis, and has been paid to his widow at Hamburg.

Adolf Witzel Endowment.—The recently deceased professor of dentistry at Bonn, Adolf Witzel, bequeathed about $2,500 to the *Centralverein deutscher Zahnaerzte*, the national association of dentists, to promote the study of stomatology at the German universities.

Scarcity of Psychiatrists in Germany.—Already the cry goes forth that there are not enough young psychiatrists to supply the demand in the German asylums. In order to attract young physicians to this branch of medicine the salaries and perquisites are being increased in some parts of Germany. They already range rather above the average, we understand.

Subjects of Berlin Prize Essays.—The subject announced by the medical faculty at Berlin for the essays in competition for the royal prize is: "Comparative Research on the Histogenesis of the Heart Musculature to Determine Specially Whether the Muscular Tissue Represents Syncytium or Belongs to the Cell Domain." The subject for the city prize essay is: "Research on the Normal and the Pathologic Anatomy of the Appendix."

Kahlbaum Endowment.—The mother of the late professor of chemistry at Basle, George W. A. Kahlbaum, has presented $9,500 to the national society for the study of the history of medicine (*Deutsche Ges. f. Geschichte der Med. u. Naturwissenschaften*), which was recently founded by her deceased son She has also given the Berlin branch of the same society $5,000, the total of the Kahlbaum endowment thus amounting to nearly $15,000.

German Naturforscher Society.—The German Association of Physicians and Scientists, better known as the "Naturforscher Association" or *Gesellschaft deutscher Naturforscher und Aerzte*, was organized for the advancement of science in all its branches. It now numbers 2,800 members and has had several bequests and endowments and frequently has a surplus left from its largely attended annual meetings. Its total capital is now about $51,000. The seventy-eighth annual meeting is to be held this year at Stuttgart, September 16 to 22. The sections for medicine and surgery form an important gathering of physicians and surgeons from all over the German-speaking countries.

Prizes Offered by Brazilian Academia Nacional de Medicina.—Among the subjects for essays to be offered in competition for the prizes are "Heat Fevers in Rio de Janeiro;" "Influence of Malaria as Determining Factor in Aortic Affections;" "Normal Stature of Children Under 2 at Rio;" "Ideal Treatment of Aneurisms;" "Etiologic Rôle of Popular Diet in Rio;" "Surgical Treatment of Tuberculous Joint Affections;" "Comparative Frequency of Syphilis and Tuberculosis in Children in Rio;" "Indications and Contraindications for Obstetric Intervention;" "Study of the Mineral Waters of Brazil;" and "Study of the Native Plants that Induce Paralysis or Convulsions." The prizes consist of gold and silver medals, but the Alvarenga prize of about $60 and the Dos Santos prize of about $50 will be given respectively for the best work in any branch of medicine and the best medical study of a Brazilian plant.

Prophylaxis of Cancer and Venereal Disease.—Prof. J. Dollinger is distributing a circular warning of the danger of cancer and the benefits of early operation, giving the circular to all the inmates of his surgical service. The circular states the early signs of cancer, and urges every one to apply to a physisician for examination when there is long-continued hoarseness or difficulty in swallowing, or symptoms attract attention to the stomach, or a bunch can be palpated in the abdomen, breast or elsewhere, or there is pain in defecation or the stools or urine are blood stained, or there is a discharge from the genitals at an unusual time. Professor von Bokay urges diligent collecting of statistics and of all facts bearing on cancer as a preliminary to the next international medical congress which is to be held at Budapest in 1909, as already announced. When data have been collected he hopes for a successful national cancer congress to collate and discuss the question of cancer exclusively before the international congress. A letter from Budapest in the *Med. Klinik* for August 12 adds to the above statements that the National League for the Repression of Venereal Diseases has appealed to the medical inspectors of the schools to enlighten youth in the first year or so in college in regard to the dangers of sexual intercourse. The directors of the high schools and colleges are urged to have the customary closing banquet a mid-day instead of a night function.

Non-use of Tuberculosis Sanatoriums in France and Belgium.—A large and supposedly model sanatorium for the tuberculous poor was erected in France three or four years ago and one in Belgium. Our French and Belgian exchanges are now commenting on the fact that these sanatoriums are practically empty all the time, with scarcely a dozen inmates to take advantage of the accommodations freely offered. The reason for this is stated in a Belgian exchange to be the fact that the sick wage-earner, as long as he is able to be about, continues at work to keep his family from starving. He does not give up and go to a sanatorium until he has reached the end of his forces, and then it is usually too late for chance of recovery. The public sanatoriums in France and Belgium lack the basis on which they have flourished to such an extent in Germany, that is, the compulsory insurance against sickness enforced for wage-earners. These sickness insurance companies are on the alert to detect tuberculosis in its incipiency, and those affected are obliged to take a serious course of treatment, generally in a sanatorium, while the indemnity paid insures the support of the family left at home. The article in question states that lacking this fundamental and beneficent legislation, the sanatoriums and convalescent homes in Belgium will continue to remain empty. It adds that the sickness insurance companies in Germany make large profits out of the business while the morbidity of the populace is being notably reduced, the working capacity increased, and distress from poverty due to sickness of the breadwinner has enormously diminished. A Belgian capitalist bequeathed a million dollars five years ago to erect a sanatorium for women, but the authorities are postponing its construction until signs indicate that it is needed.

LONDON LETTER.

(From Our Regular Correspondent.)

London, Aug. 18, 1906.

Drastic Bill to Prevent Juvenile Smoking.

A select committee of the house of lords has adopted a drastic bill to prevent juvenile smoking. Its most striking provisions are as follows: "Every child under the age of 16 who shall be found in the possession of cigarettes or smoking tobacco in any form shall on conviction be liable to a penalty of not exceeding 40 shillings for each offense and shall be subject to the provisions of the Youthful Offenders' Act, 1901. Every person who knowingly sells or suffers to be sold or delivered any description of cigarettes to any child under the age of 16 years shall be liable to a penalty not exceeding 40 shillings for the first offense and not exceeding 5 pounds for every subsequent offense." The committee recommend that police constables shall be empowered to stop all youths apparently under the age of 16 seen smoking in any public place and allowed to confiscate any tobacco found on them. In making this report the committee were much impressed by the unanimous opinion of all the witnesses, including representatives of the tobacco trade, that "the habit of juvenile smoking produces indirectly a number of ills, facilitates the work of disease and leads to habits of drink. They were especially impressed by the evidence to the effect that there are no signs of physical deterioration among girls. The witnesses all said that the reason for this was that girls are, generally speaking, entirely free from this habit." It was proved conclusively that juvenile smoking has increased rapidly of recent years, and it was urged that while its present influence is bad, the effects must be worse in future generations.

The Declining Birth Rate.

The phenomenon of a declining birth rate, which has been noted several times before in The Journal, still continues. The births registered in the second quarter of 1906 were in the proportion of 27.5 annually per 1,000 of the population. This is the lowest birth rate recorded in any second quarter since civil registration was established. The mean rate in the preceding 10 quarters was 29.1. The natural increase in the population of England and Wales during the quarter by excess of births over deaths was 111,800 against 117,850 in the second quarter of 1903, 114,389 in 1904, and 113,726 in 1905. The marriage rate is also declining. During the first quarter of this year it was 10.7 against an average of 11.4 in the first quarters of the preceding 10 years. The death rate shows some improvement. During the second quarter of 1906 it was 14.6 against 15.9 an average of in the preceding 10 years. Infantile mortality was 102 deaths per 1,000 registered births against an average of 119 in the preceding years.

Dyed Meat.

The sale of unwholesome food is by no means confined to Chicago products and the methods of sophistication are endless. A butcher has been summoned for having on his premises 105 pounds of meat intended for the food of man which was unwholesome. Among the articles found were two tins of beef brawn which was the product of a diseased animal. Dr. Bousfield, public analyst, stated that on cutting the meat open he found an abscess cavity from which he took a soft pulpy substance, microscopic examination of which revealed the ordinary bacteria of suppuration. The animal must have suffered from antemortem inflammation. The meat had been colored with an analin dye, producing a salmon tint. A fine of $4 and $50 costs was imposed.

Pharmacology

THE COMPARATIVE PHYSIOLOGIC ACTIVITY OF SOME COMMERCIAL SUPRARENAL PREPARATIONS.

Reid Hunt, M.D.

Chief of Division of Pharmacology, Hygienic Laboratory, United States Public Health and Marine-Hospital Service, Member of the Council on Pharmacy and Chemistry of the American Medical Association.

WASHINGTON, D. C.

The Hygienic Laboratory has recently been requested by another office of the government to compare the physiologic activity of certain suprarenal preparations which had been offered at different prices on competitive bids. After a consideration of various methods proposed for standardizing such preparations (colorimetric methods by Abel, Batelli and others; effect on the pupil of the frog's eye as recommended by Ehrmann, etc.), it seemed that the blood-pressure method was the most suitable for my purposes, especially as the question to be answered referred more to relative than to absolute strength. By observing certain simple precautions it is possible to obtain very uniform results by the blood-pressure method. The most important of these precautions is to have the animal in such a condition that as few factors as possible are to be considered. The animal should be thoroughly anesthetized, and preferably curarized also, so as to avoid effects on the blood-pressure of any movements or disturbances in respiration resulting either directly from the drug or from changes in the blood pressure. The vagi should be cut or atropin used, so as to exclude the changes in the heart rate due to the direct action of the drug on the cardio-inhibitory apparatus or to the effect of changes of blood pressure on this apparatus. All injections should be made at a uniform rate and into veins as remote from the heart as possible. In the present experiments the injections were invariably made into the saphena veins and the duration of the injection accurately recorded on the kymograph. The various preparations to be compared were injected into the same animal and at intervals of a few minutes of each other; one preparation was injected into the right saphena vein, the other into the left, and the injections were repeated a number of times. The blood pressure was taken from the carotid artery.

FIRST SERIES.

In this series three preparations of the active principle w examined, all purporting to be solutions 1 to 1,000. T price asked for two, A and B, was about 70 cents per ounc for the other, C, 42 cents.

Two bottles of each were purchased on the open market; r difference in strength between the two bottles of the sam preparation was found.

Experiment, April 2.—Rabbit, 2,140 gm.; anesthetized with urethane and chloral hydrate; vagi cut.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
1:49	A, 1 to 25,000..........1 c.c.	105	157	52
1:53	B, 1 to 25,000..........1 c.c.	103	154	51
2:13	C. 1 to 25,000..........1 c.c.	103	140	37

The rise of blood pressure from equal amounts of A and B were practically equal and about 1.4 times as great as that from C.

Experiment, April 6.—Rabbit, 2,250 gm.; urethane and chloral; curare; vagi cut.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
2:02	C, 1 to 25,000..........7 c.c.	90	151	61
2:05	B, 1 to 25,000..........1 c.c.	90	192	102

The rise of pressure from B was nearly 1.7 times as great as that from an equal amount of C.

Later in this experiment the following results were obtained:

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise
3:31	C, 1 to 25,000..........1 c.c.	78	108	30
3:34	B, 1 to 25,000..........1 c.c.	78	132	54

The rise of pressure from B was 1.8 times as great as that from C.

The following results were obtained with C and A:

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
3:59	C, 1 to 25,000..........1 c.c.	80	116	36
4:01	A, 1 to 25,000..........1 c.c.	78	142	64
4:03	C, 1 to 25,000..........1 c.c.	81	124	43
4:10	A, 1 to 25,000..........1 c.c.	79	146	67
4:21	C, 1 to 25,000..........1 c.c.	82	122	40

Thus the rise of blood pressure from A was about 1.6 times as great as that from C.

In the following experiments equal amounts of different dilutions were injected:

Experiment, April 9.—Rabbit, 1,850 gm.: urethane and chloral hydrate; curare; vagi cut.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
3:38	C, 1 to 18,000..........1 c.c.	105	135	30
3:41	A, 1 to 25,000..........1 c.c.	102	138	36
3:55	C, 1 to 11,000..........1 c.c.	73	130	57
3:59	A, 1 to 25,000..........1 c.c.	75	127	52
4:08	A, 1 to 25,000..........1 c.c.	68	123	55
4:11	C, 1 to 15,000..........1 c.c.	70	124	54
4:15	A, 1 to 25,000..........1 c.c.	68	121	53

Thus when the ratio of the strength of C to that of A was about 1.7 to 1, approximately equal rises of blood pressure were obtained from equal amounts of the preparations.

In another experiment the following results were obtained:

Experiment, April 10.—Rabbit, 1,720 gm.: urethane and chloral: curare: atropin.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
3:57	C, 1 to 12,500..........1 c.c.	86	145	59
4:00	A, 1 to 25,000..........1 c.c.	84	144	60
4:13	A, 1 to 100,000..........1 c.c.	82	122	40
4:15	C, 1 to 50,000..........1 c.c.	76	126	50
4:19	A, 1 to 85,000..........1 c.c.	79	127	48
4:23	C, 1 to 50,000..........1 c.c.	75	122	47

Here again in order to obtain equal rises of blood pressure it was necessary to use a solution of C about 1.7 times as concentrated as of A. The rise of pressure in the first two injections was maximal; a weaker solution of each would probably have caused as great an effect.

CONCLUSIONS.

The above experiments show that equal amounts of equal dilutions of A and B have equal effects on blood pressure; (2) that A and B cause from 1.4 to 1.8 times the rise of blood pressure as do equal amounts of C, and (3) that in order to obtain equal rises from equal amounts of C on the one hand and A and B on the other it is necessary to have the solution of the former about 1.7 times as concentrated as of the latter. Hence we may conclude that B and A were of about equal strength and that they were about 1.7 times as active as C. The apparent discrepancy under (2) is readily explained as follows: In those cases in which the rise from A (or B) was about 1.4 times as great as that from C the effect of the former was already maximal and the same effect would have been produced by solutions weaker than the one actually employed.

It is interesting to note that the prices at which these preparations were offered were in direct proportion to their strength; the price asked for A and B was about 1.7 times as great as that of C, and the strength of the former was about 1.7 times as great as that of the latter.

SECOND SERIES.

In this series we were requested to test four preparations, three of solutions of the active principle (labeled 1 to 1,000) and one of the dried and powdered gland. Two of the preparations, C and A, were from the same manufacturers as in the first series. These preparations were offered at the following prices:

	19 cents
D, 25 c.c.	60 cents
A, 25 c.c.	60 cents
C, 25 c.c.	72 cents
Suprarenal gland (desiccated), 1 ounce	

The samples were submitted by the competing firms.

The examination was made as in the first series. Inasmuch, however, as the most satisfactory results were obtained when equal amounts of different dilutions were compared, only these results will be reported here.

Experiment, June 15.—Rabbit, 2,770 gm.: urethane and chloral hydrate; curare; vagi cut.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
4:13	D, 1 to 50,000..........1 c.c.	65	89	24
4:15	A, 1 to 100,000..........1 c.c.	64	122	58
4:20	D, 1 to 25,000..........1 c.c.	65	100	35
4:23	A, 1 to 100,000..........1 c.c.	58	114	56
4:30	A, 1 to 150,000..........1 c.c.	63	107	44
4:44	A, 1 to 150,000.......... 1 c.c.	69	111	42
4:46	D, 1 to 20,000..........1 c.c.	74	127	53
4:54	A, 1 to 100,000..........1 c.c.	71	125	54
5:01	D, 1 to 20,000..........1 c.c.	70	119	49
5:07	C, 1 to 100,000..........1 c.c.	77	120	43
5:11	A, 1 to 100,000..........1 c.c.	82	130	48
5:37	D, 1 to 20,000..........1 c.c.	90	120	30
5:41	C, 1 to 100,000..........1 c.c.	90	117	27

An examination of the above table shows that approximately equal rises of blood pressure from A and D were obtained only when the concentration of the latter was about five times as great as that of the former. The figures are not so satisfactory for comparing the strengths of A and C, but they indicate in a general way that these preparations were of nearly equal strengths.

Experiment, June 21.—Rabbit: urethane and chloral hydrate; curare; vagi cut.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
3:25	D, 1 to 10,000..........1 c.c.	62	120	58
3:35	A, 1 to 50,000..........1 c.c.	62	121	59
3:38	D, 1 to 20,000..........1 c.c.	67	112	45
3:49	A, 1 to 100,000..........1 c.c.	56	102	46
3:51	D, 1 to 40,000..........1 c.c.	64	85	21
3:56	A, 1 to 150,000..........1 c.c.	62	96	34

These results show again that equal rises of blood pressure were obtained only when D was about five times as concentrated as A.

Similar results were obtained later in the same experiment; as shown in the following table, the effect on the blood pressure was less, but the two preparations had the same relative activity. These figures also show that C and A were of about the same strength and also give approximate results for the relative strengths *of decoctions of the dried glands and the* active principle.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
4:40	Suprarenal gland, 1 to 1,000..1 c.c.	52	97	45
4:46	Suprarenal gland, 1 to 2,000..1 c.c.	49	72	23
4:50	A...............1 to 100,000..1 c.c.	48	70	22
4:53	C...............1 to 100,000..1 c.c.	45	68	23
4:58	D...............1 to 20,000..1 c.c.	43	68	25
5:01	D...............1 to 40,000..1 c.c.	43	54	11
5:04	C...............1 to 100,000..1 c.c.	40	60	20
5:14	Suprarenal gland, 1 to 500..1 c.c.	38	80	42
5:21	A...............1 to 50,000..1 c.c.	47	91	44
5:27	D...............1 to 10,000..1 c.c.	40	83	43
5:30	D...............1 to 20,000..1 c.c.	43	66	23
5:33	A...............1 to 100,000..1 c.c.	42	62	20
5:36	Suprarenal gland, 1 to 250..1 c.c.	27	106	79

For some reason the results of these experiments with decoctions of the dried gland (made by warming on the water bath for one-half hour with *normal saline solution*) are not very concordant. Thus in the first injections (4:46 and 4:50)

1 c.c. of a decoction of the gland 1 to 2,000 caused a rise of blood pressure equal to that caused by 1 c.c. of A 1 to 100,000; this would indicate that 1 gm. of the dried gland would yield 20 c.c. of a decoction equal to A 1 to 1,000. In the later injections, however (5:14 and 5:21), 1 c.c. of a decoction of the gland 1 to 500 caused a rise of blood pressure equal to that caused by 1 c.c. of A 1 to 50,000; or, according to these results, 1 gm. of the dried gland would yield but 10 c.c. of a solution corresponding to a solution 1 to 1,000 of the active principle.

Special attention was given to the determination of the relative strengths of decoctions from the gland and A in the following:

Experiment, July 6.—Rabbit, 1,750 gm.; urethane and chloral hydrate; curare; vagi cut.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
4:27	A...............1 to 50,000..1 c.c.	56	90	34
4:35	Suprarenal gland, 1 to 750..1 c.c.	60	95	35
4:47	A...............1 to 50,000..1 c.c.	64	98	34
4.52	Suprarenal gland, 1 to 750..1 c.c.	65	96	31
5:03	A...............1 to 100,000..1 c.c.	45	70	25
5·05	Suprarenal gland, 1 to 1,125..1 c.c.	50	75	25
5:12	Suprarenal gland, 1 to 1,500..1 c.c.	38	57	19
5:15	A...............1 to 100,000..1 c.c.	36	54	18
5:35	A...............1 to 25,000..1 c.c.	45	105	60
5:39	Suprarenal gland, 1 to 750..1 c.c.	50	101	51

The results again are not entirely concordant, but they show that 1 gm. of the dried gland yielded from 11 to 15 c.c. of a solution corresponding to a 1 to 1,000 solution of the active principle (1 gm. of the gland macerated with 750 c.c. normal saline yielded a solution, 1 c.c. of which equaled, physiologically, 1 c.c. of A 1 to 50,000; or 50 c.c. of the gland decoction, 1 to 750, would equal, physiologically, 1 c.c. of a solution of A 1 to 1,000. Hence 750 c.c., the decoction prepared from 1 gm. of the gland, equaled, physiologically, 15 c.c. of A 1 to 1,000).

Three days later the same solutions were again tested; the results were similar, but indicated that the decoction from the gland had undergone greater deterioration than had the solution of the active principle.

Experiment, July 9.—Rabbit, 2,090 gm.; urethane and chloral hydrate; curare; vagi cut.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
1:43	Suprarenal gland, 1 to 1,875..1 c.c.	42	64	22
1:46	A...............1 to 125,000..1 c.c.	40	68	28
1:53	A...............1 to 100,000..1 c.c.	38	70	32
1:55	Suprarenal gland, 1 to 150,000..1 c.c.	38	64	26
1:57	A...............1 to 100,000..1 c.c.	37	65	28
2:09	A...............1 to 50,000..1 c.c.	40	100	60
2:10	Suprarenal gland, 1 to 750..1 c.c.	42	90	48
2:13	A...............1 to 50,000..1 c.c.	38	98	60
2.20	A...............1 to 75,000..1 c.c.	36	70	34
2:24	Suprarenal gland, 1 to 1,050..1 c.c.	40	76	36
2:26	A...............1 to 75,000..1 c.c.	37	74	37

CONCLUSIONS.

From these experiments we may conclude that the samples of C and A were of about equal strength and approximately five times as strong as the sample of D. Although the price at which the latter was offered was but approximately one-third of that of the former, it was in reality the most expensive of the three. These experiments also show that the physician or pharmacist could prepare from an ounce of dried suprarenal gland about 15 fluid ounces of a decoction equal in strength to that of the active principle 1 to 1,000. As the price of an ounce of the dried gland is but little higher than that of a fluid ounce of the solution 1 to 1,000, the economy of using the former, when practicable, is evident; in practice there are, however, many cases in which a solution of the active principle is much to be preferred.

It is interesting to compare the deductions based on physiologic experiments as to the amount of active principle present in the dried gland with the chemical results. Abel (*American Journal of Pharmacy*, 1903, p. 312) calculated that the fresh beeves' suprarenals contain at least 0.3 per cent. of the active principle. One part of the dried gland corresponds, according to the United States Pharmacopeia, to approximately six parts of the fresh gland; hence, according to Abel's experience, the dried gland should contain about 1.8 per cent., or 1 gm. of the dried gland would contain 0.018 gm. of the active principle. Hence 1 gm. of the dried gland should yield about 18 c.c. of a solution corresponding to 1 to 1.000 of the active principle. As a matter of fact, I found that it yielded about 15 c.c. of such a solution, and it is improbable that the gland was completely exhausted in my experiments.

It would not be fair to infer from these experiments that manufacturers are intentionally mislabeling their preparations; it is much more probable that they do not always make their solutions from pure preparations of the active principle, and that afterward the solutions are not tested physiologically with sufficient care. Only one bottle of D was examined, the one submitted by the manufacturers; this, which was so deficient in strength, was stated to have been tested physiologically. It is possible that the solution in this bottle had deteriorated, although it presented none of the ordinary indications of deterioration (turbidity, change in color, etc.). The experiments do, however, show very plainly that some manufacturers do not put out preparations of uniform strength.

THE COMPARATIVE PHYSIOLOGIC ACTIVITY OF SOME COMMERCIAL SUPRARENAL PREPARATIONS.

Pharmacologic Laboratory of Western Reserve University,
Cleveland, Ohio, Aug. 2, 1906.

To the Council on Pharmacy and Chemistry of the American Medical Association:—We submit herewith the following report on the examination of a series of suprarenal preparations, undertaken at your request:

SAMPLES.

The experiments were made with two sets of freshly bought samples, one set (*a*) purchased from a jobbing druggist, the second (*b*) from a high-class prescription pharmacy.

The packages bore the following manufacturers' numbers:

	(*a*.)	(*b*.)
Preparation 1........	C. P. 60183 C. D.	C. P. 60183 C. C.
Preparation 2..........	1083641	1088731
Preparation 3..........	210072	303082
Preparation 4..........	670028	670000

The samples were of acid reaction, except preparation 4, *b*, which was distinctly alkaline and which bore an odor of thymol, absent in sample *a*.

METHODS.

The efficiency was tested by injecting a 1 to 50 dilution (in normal saline) of the 1 to 1,000 solution, usually in doses of 0.5 c.c. per kg. of body weight (equals 0.01 c.c. per kg. of the 1 to 1,000 solution) into the femoral vein of anesthetized dogs, alternating the samples in irregular sequence and taking carotid blood-pressure tracings. The vagi were intact in some, divided in other experiments. In all, seventy-one injections were made on twelve dogs.

The keeping quality was estimated by allowing the above dilutions to stand the specified time and observing the physiologic efficiency and the change of color.

To prevent any possibility of bias, the solutions were made by an assistant and provided with numbers, the identity of the products being unknown to us until the experiments were completed and the conclusions drawn.

RESULTS.

Efficiency of the Fresh Solutions.—Designating the efficiency of the solution of preparation 2, *a*, as 100, that of the other samples of the series is approximately as follows:

	Efficiency of *a*.	Efficiency of *b*.
Preparation 1....................	70	76
Preparation 2....................	100	86
Preparation 3....................	86	63
Preparation 4....................	95	nil.

Suprarenalin, *b*, had no effect on blood pressure, even in doses of 0.1 c.c. per kg., i. e. in ten times the standard dose.

Keeping Qualities of the Diluted Solutions.—This may be judged from the following table:

	Efficiency of Fresh Dilution.	After Standing One Day.	After Two Days	Discoloration in One Day.	In Two Days.
Preparation 1, *a*	70	25	0	None . . .	—
Preparation 1, *b*	70	Active . .	Active . .	None	None.
Preparation 2, *a*	100	0	—	Dark pink.	—
Preparation 2, *b*	86	0	—	Dark pink.	—
Preparation 3, *a*	86	15	0	None . . .	—
Preparation 3, *b*	63	0	—	None . . .	None.
Preparation 4, *a*	95	0	—	Light pink	—
Preparation 4, *b*	0	—	—	Light pink	—

CONCLUSIONS.

In view of the variability in the commercial samples, as revealed in our examination, definite conclusions concerning the comparative activity of the different makes of suprarenal solutions are not warranted. Theoretically, all samples of "1 to 1,000 solution of suprarenal alkaloid" should be of identical strength, just as are all 1 to 1,000 solutions of strychnin. It is evident that this is not the case in practice, and that the physician, in injecting this powerful substance, is at present unable to use a perfectly exact dosage. Our samples of preparations 1 and 2 exhibited less variation than preparations 3 and 4, but we can not be certain that a larger series of samples might not have shifted the relative position. This is also true of the average efficiency, which decreases in the first series of samples from preparation 1 (100) to preparation 4 (95), to preparation 3 (86), to preparation 1 (70); in the second series, from preparation 2 (86), to preparation 1 (70), to preparation 3 ((63), to preparation 4 (0). We repeat that we would not lay any emphasis on the comparative efficiency of the different makes on account of the variability.

The results as to the stability of the solutions are more constant. Preparation 1 is the most stable, then comes preparation 3, then preparation 4, then preparation 2. This subject of stability, however, has probably little practical importance, since the dilutions of all the samples are practically worthless after twenty-four hours.

We are unable to state whether the samples vary in strength when they leave the makers' hands, or whether the differences are due to subsequent deterioration. The former would be quite inexcusable. The latter would seem to demand a dating and returning system similar to that in vogue for antitoxic sera.

Respectfully submitted,
Torald Sollmann,
Edgar D. Brown.

Correspondence

Cocain in Tucker Asthma Cure.

Shiloh, O., Aug. 28, 1906.

To the Editor:—Referring to the article of Dr. Vickery on "Cocain in Tucker Asthma Cure" in The Journal A. M. A., Aug. 4, 1906, I wish to thank the author for his report and to commend his suggestion as to what ought to be done to suppress such a "cure." I had a case here, with all the symptoms of acute cocain poisoning, as the result of using the above preparation. The patient was a child 5 years of age, and I can assure you that a "remedy" that will produce as marked symptoms of poisoning in as short a time as does the Tucker Asthma Cure, needs to be removed from the market, or at least labeled as to its contents, and not retailed to an unsuspecting public as a harmless asthma cure.

N. P. McGay.

The Teaching of Medical Jurisprudence in New York.

Jersey City, Aug. 28, 1906.

To the Editor:—In The Journal, Aug. 25, 1906, page 586, you make the editorial statement that "The New York schools, Columbia, Bellevue and Cornell, make no mention of the subject whatever. Medical jurisprudence is not among the courses required by the New York Board of Regents." I call attention to the fact that Hon. Millard Bartlett of the appellate division of the Supreme Court delivers fifteen lectures each year at the Long Island College Hospital to the third year class.

Walter T. Dannreuther, M.D.

Hay Fever and Ivy Poisoning.

Cincinnati, Aug. 28, 1906.

To the Editor:—A year ago, while suffering from hay fever, I was poisoned with ivy. Though in the midst of the season the hay fever disappeared immediately on the advent of the ivy poisoning and gave me no further trouble that year. Was this a coincidence or a consequence? If the latter, why? Have any more of your numerous readers made the same observation?

Pollantin in hay fever has given me no relief.

E. S. McKee.

Records of Graduates of Flint Medical College.

New Orleans, Aug. 27, 1906.

To the Editor:—At the May meeting of the Louisiana State Board seven of the eight 1906 graduates of Flint Medical College presented themselves for examination, and only one failed to pass. This gives a 14 2/7 per cent. of failures and should place us in Table J of your statistics instead of Table K. In justice to our school and its present administration, may I ask you to publish this statement?

A. D. Bush, Dean.

[Editor's Note.—Tables J and K, to which Dr. Bush refers, appear in the annual Educational Number of The Journal, August 25, and are a part of the detailed summaries of the results of the state board examinations in all states for the year 1905. This May examination, at which he says a better record was made, is, of course, a portion of the record for 1906, and this will be included in a summary of the year 1906 to appear early in 1907.]

Population of Los Angeles.

Los Angeles, Cal., Aug. 27, 1906.

To the Editor:—On page 613 of the Educational Number (August 25) of The Journal, under the California heading, the city of Los Angeles is given a population of 116,420.

Since clinical facilities are dependent somewhat on the amount of population, a correction is in order if a proper impression is to be given. The population of Los Angeles at the present time is over 240,000 instead of 116,420. I refer you to the enclosed article from to-day's Los Angeles *Times* showing the most recent figures. The school census last spring showed a population of 230,000. Further, the city water department has 50,977 service pipes in use and five persons to a service pipe is a conservative average. The monthly health reports are based on a population of 200,000, in order to allow a safe margin, but this estimate will shortly be increased.

Los Angeles then is not in the 100,000 but rather in the 250,000 class, and has clinical facilities commensurate with a city of that size.

George H. Kress.

[Editor's Note:—We are very glad to have this information. As stated in the Educational Number, the figures used were the estimates of the government's Census Bureau for 1903.]

Treatment of Hay Fever by Securing Normal Nostrils.

Hartford, Conn., Aug. 20, 1906.

To the Editor:—In The Journal, August 18, Dr. Dunbar Roy writes that at the session of the Association held at Atlantic City in 1904 I claimed to cure hay fever "by simply forcing patients to become absolute nose breathers." Dr. Roy is in error. I did and do claim to cure hay fever by giving my patients nostrils as nearly normal as possible, and then insisting that they breathe through the nose as Nature intended they should. The perusal of my monograph, "Mouth Breathing," should make clear to the reader what I consider necessary in a general way, not only for the relief but cure of the hay-fever patient, also what I consider harmful to that patient. I have yet to find a hay-fever patient at any period with normal nostrils, although I often find them with nothing more abnormal than a few irritable areas. I have yet to hear of a single patient whom I have discharged—and they are many—who has had a recurrence.

In my opinion a nostril is not normal if it is capable of establishing a contact area, especially below its median line; further, a nostril is not normal which contains a single irritable area. If I can find a contact area in the nostril of a hay-fever patient, at any other period than his hay-fever period, for the purpose of diagnosis, or if that patient reports to me when he has a "cold in his head," that I may observe where his areas of. contact are, I obliterate them when quiescent, either surgically or through cauterization. If I examine the patient during his periodic attack for the first time I advise immediate operation when necessary. I remove what I consider necessary at any point in any nostril, and this without the slightest fear of establishing atrophic areas, since I know my patient is going to become a normal breather. I fully appreciate that indiscriminate cutting would prove disastrous, but if we use a little common sense, backed by experience and some originality, and depend less on the general run of text-books whose authors copy one from another treatment that a school boy with a rudimentary knowledge of physiology should deem absurd, oft-times treatment handed down for generations, we will prove ourselves worthy of the respect of the general public.

We will accomplish much if, instead of waiting for immunizing serums to do the work for us which we are too lazy to do ourselves, we awaken to the fact that Nature stands willing to furnish us a power to resist not only hay fever, but all other affections of the breathing tract when once the upper breathing tract is as nearly normal as possible.

Dr. Roy further states: "After a thorough trial of this method, with the hearty coöperation of my patients, I have not been able to secure the results claimed by Dr. Fitzgerald." My advice to Dr. Roy, whom I believe to be a conscientious and painstaking rhinologist, is to become more familiar with my method, and then to give it a thorough trial to prove to his own satisfaction that we have found "the light which will lead us out of the darkness and gloom" for which he writes he is waiting. W. H. Fitzgerald.

Treatment of Hay Fever by Dunbar's Remedies (Pollantin).

La Junta, Colo., Aug. 22, 1906.

To the Editor:—I have read with interest the reports made through The Journal on the use of pollantin in hay fever. My experience has been very limited; I have never used it until within the last two months. Four cases treated resulted as follows:

1. A very aggravated case, in an aged person, who every year suffers intensely. The relief from the eye symptoms was immediate. For the nasal symptoms, which were but slightly relieved, a weak solution of adrenalin was ordered (this previously had given to this patient relief for a few moments only) to be followed by the pollantin. Relief was very marked and three weeks later patient reported herself as being more comfortable than she had ever dared hope to be.
2. First attack, in a person who has resided here several years. Eye symptoms predominated. Relief was very rapid. This may not have been a true case of hay fever.
3. This man suffers severely every season with well-marked symptoms. He thought that he got a little relief.
4. Patient two years from the East, who never had an attack while here. Hay fever came in the first year of his residence here. No relief.

In these cases no attempt was made to treat any abnormal systemic conditions, nor were the proprietor's directions as to sleeping with closed windows, etc., followed. The preparation used was the powder, and the fall variety. The originators are fairly conservative in their claims as set forth in the literature, but the way in which the preparation is marketed will soon put it out of the hands of physicians and into the hands of the laity. E. Gard Edwards, M.D.

Book Notices

Eczema. A Consideration of Its Course, Diagnosis and Treatment Embracing Many Points of Practical Importance, and Containing 146 Prescriptions, Illustrating Dosage in Local Applications. By Samuel H. Brown, M.D., Assistant Dermatologist, Philadelphia Hospital, etc. Cloth. Pp. 105. Price, $1.00. Philadelphia: P. Blakiston's Son & Co., 1906.

In the first 28 pages the author considers briefly the varieties, etiology, pathology, symptoms and diagnosis of this disease. The other 71 pages are devoted to treatment. Instead of generalizing, the author gives prescriptions for both local and general treatment.

Military Hygiene. By Robert Caldwell, F.R.C.S., D.P.H., Lieutenant-Colonel Royal Army Medical Corps; formerly Medical Officer in Charge District Laboratory, Meerit; Member of Committee on Field Sanitation in Connection with Surgeon-General's Report on South African Campaign; Medical Officer in Charge, District Laboratory and Isolation Hospital, First Army Corps. New York: William Wood & Co. 1905.

The object of the book, as the author states, is to give "a short account of those principles of sanitation which most nearly affect the soldier in his every-day life." Of course, it does not go so deeply into details as the encyclopedic work of Munson, but it is in the main accurate, and the advice given will prove valuable both to the junior and senior officers. The author seems to be a little too conservative in certain matters, such as that of the use of kerosene in marshes, the employment of mosquito nettings, the practicability of sterilization of water by boiling, etc.

The Ophthalmoscope and How to Use It. With Colored Illustrations. Descriptions and Treatment of the Principal Diseases of the Fundus. By J. Thorington, A.M., M.D. 13 Illustrations and 12 Colored Plates. Cloth. Pp. 298. Price, $2.50. Philadelphia: P. Blakiston's Son & Co., 1906.

This may be described as a condensed text-book. While avoiding long mathematical calculations, it leaves little to desire in the matter of clearness of text or illustration. The ten chapters treat of the ophthalmoscope, optics, anatomy and anomalies of the eye, the normal eye ground, structural changes in disease, the vision, retinal vessels, diseases of the retina, of the optic nerve, and of the choroid. Besides numerous figures in the text, it contains twelve excellent colored plates of the fundus in health and in a variety of diseases of the retina and other structures.

A Text-Book of Human Physiology, Including a Section on Physiologic Apparatus. By A. P. Brubaker, A.M., M.D. Second Edition. Revised and Enlarged, with Colored Plates and 356 Illustrations. Cloth. Pp. 715. Price, $4.00. Philadelphia: P. Blakiston's Sons & Co., 1905.

The second edition of this work is improved by thorough revision of the sections on the chemistry of the proteids, the chemistry of digestion, the movements of the intestines, the production of lymph, the nerve mechanism of the heart, and the physiology of vision. In the section on the movements of the intestines the author refers to the investigations by Cannon by means of the Roentgen rays and the fluoroscope. Of the production of lymph from the blood and its diffusion he admits that the last word has not been said. The present edition reflects fairly the present state of knowledge and commends itself to all who are interested in the subject, whether as teachers, students or practitioners.

Deaths

Charles G. Bacon, M.D. Albany (N. Y.) Medical College, 1874, who attended a course of lectures in that institution in 1840-1841 and in March, 1841, was licensed to practice in the state of New York by the New York State Medical Society; for 45 years a practitioner of Fulton, N. Y.; a member of the Oswego County Medical Society and a delegate in 1854 to the American Medical Association; for 15 years a censor of the New York State Medical Society; in 1843 hospital brigade surgeon for the Forty-eighth brigade of the Militia of the State of New York, with the rank of major; given an honorary medical degree by the regents of the State of New York in 1858; in 1887 president of the New York Central Medical Society, died at his home in Fulton, August 18, aged 92.

William Edwin Taylor, M.D. Medical College of the Valley of Virginia, Winchester, 1859; medical inspector United States Navy, retired; who was appointed to the Navy in 1859 and served 10 years and 5 months on sea duty and 12 years and 3 months on shore and other duty, until his retirement on account of ill health in 1881; for 18 years professor of surgery in the Medical Department of the University of California, and during that time president of the Medical Association of the City and County of San Francisco; since 1898 a resident of Honolulu, H. I., where he served as president of the local medical society and as a member of the Board of Medical Examiners and of the Board of Dental Examiners of the territory, died at his home in Honolulu, July 30, aged 68.

James W. Breedlove, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1849, of Fort Smith, Ark.; for 12 years surgeon in the United States Marine-Hospital Service at New Orleans; surgeon of the Third Louisiana Infantry and later medical inspector in the Confederate service during the Civil War; a charter member of the Sebastion County (Ark.) Medical Society and at one time its president, died at Belle Point Hospital, Fort Smith, August 16, from paralysis, after an illness of four months, aged 79.

George F. Brendle, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1862; a member of the American Medical Association and a veteran physician of Mahanoy City, Pa.; for many years a member and officer of the Schuylkill County Medical Society; a charter member of the borough of Mahanoy City and councilman and chairman of the sanitary committee of that borough, died at his home, August 23, from heart disease, after a prolonged illness, aged 69.

Robert L. McCurdy, M.D. Cleveland Medical College, Medical Department of Western Reserve College, 1853; said to have been the oldest practitioner of Freeport, Pa.; at various times burgess, councilman and school member of the Freeport board of health; a member of the Medical Society of the State of Pennsylvania, Armstrong County Medical Society and Allegheny Valley Medical Society, died at his home in Freeport, August 26, after a brief illness, aged 81.

William Rockwell Cheever, M.D. College of Physicians and Surgeons of Chicago, 1896; a member of the American Medical Association and Wisconsin State Medical Society; president of the Kenosha Medical Society and treasurer of the Kenosha County Medical Association; one of the most brilliant young physicians of Kenosha, was found dead in his room in that city from accidental asphyxiation by gas, August 30, aged 38.

Richard Coleman Carlisle, M.D. New York University, New York City, 1862; assistant surgeon in the Confederate service and assigned to duty at Chimborazo Hospital, Richmond, and later surgeon of the Seventh South Carolina Infantry; a prominent citizen of Newberry County, S. C., died at his home nine miles north of Newberry, August 21, from acute gastritis, after an illness of one week, aged 70.

William H. McCullough, M.D. Cincinnati College of Medicine and Surgery, 1878; of Tarentum, Pa.; formerly burgess of Tarentum and member of the legislature from the Seventh district; superintendent of the Sandusky County Home, Woodvile, Ohio, in 1900, died at the home of his sister, in Petrolia, Pa., August 25, after a prolonged illness, from injuries received in a railroad accident, aged 55.

John N. Bassett, M.D. New York University, New York City, 1882; a member of the American Medical Association; once president of Canton, N. Y., and for 12 years a member of the school board; one of the most esteemed practitioners of St. Lawrence County, died at his home in Canton, N. Y., August 16, after an illness of two days from cerebral hemorrhage, aged 56.

Jerome B. Greene (Examination. Pennsylvania, 1861); surgeon in the Army throughout the Civil War; for many years a practitioner of Providence, R. I., died suddenly, July 27, from cerebral hemorrhage, while making an address at a reunion of the Rhode Island Fifth Heavy Artillery, aged 75.

John Harris Westerfield, M.D. University of Louisville, Medical Department, 1871, a member of the Polk County (Ark.) Medical Society and of the American Medical Association, died at his home in Atkins, Ark., July 31, from gallstone disease, after an illness of four weeks.

Nathaniel Cass, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1882, several times an alderman of Cameron, Texas, died at his home in that city, August 20, from pneumonia, following an attack of appendicitis, for which operation was performed 25 days before.

Walter Ross Langdon, M.D. Jefferson Medical College, Philadelphia, 1852; of Stockton, Cal.; surgeon in the Confederate Army throughout the Civil War; physician at the Stockton State Hospital from 1871 to 1888, died from heart disease, at Santa Cruz, Cal., August 5, aged 75.

Donald A. Link, M.D. Detroit (Mich.) College of Medicine, 1895, of Volinia, Mich., a member of the Michigan State Medical Society and Cass County Medical Society, was accidentally drowned while shooting the rapids of the Moon River, near Ravenhurst, Ont., August 15, aged 40.

Sam Houston Hynds, M.D. Jefferson Medical College, Philadelphia, 1860; a Confederate veteran; for many years a practitioner of Arkansas and Tennessee, died at Parvin, Texas, July 3, from gastritis and hepatitis, after an illness of two months, aged 69.

Christopher Anton Jaeger, M.D. Western College of Homeopathic Medicine, Cleveland, 1864; a veteran of the Civil War; said to be the oldest practitioner of Elgin, Ill., died at the Sherman Hospital, Elgin, August 24, after an illness of one year, aged 79.

George W. Taylor (Years of Practice, Indiana), a surgeon in the Confederate service during the Civil War and for many years a practitioner of Crawfordsville, Ind., died at his home in that city, June 29, from paralysis, after an illness of 11 years, aged 85.

John Gregg (Years of Practice, W. Va.), a veteran of the Civil War and one of the oldest practitioners of Harrison County, W. Va., died in St. Mary's Hospital, Clarksburg, August 18, from nephritis, after an illness of several weeks, aged 68.

Jesse W. Jansen, M.D. New York University, New York City, 1886, supervisor from the Sixth Ward of Binghamton, N. Y., in 1892, died at his home in that city, August 27, from nervous prostration, after an illness of three weeks, aged 45.

Walter Tate Cody, M.D. Rush Medical College, Chicago, 1886, of Detroit, was taken ill at Cobalt, Ont., removed to Toronto General Hospital and died in that institution, August 28, a few hours after an operation for brain tumor, aged 48.

Edward D. Perkins, M.D. University of Georgetown, Medical Department, Washington, D. C., 1895, of Washington, D. C., died at Providence Hospital, in that city, August 24, from peritonitis, after an illness of five days, aged 41.

John C. Holmes, M.D. College of Physicians and Surgeons in the City of New York, 1864, a retired practitioner of Cranbury, N. J., was instantly killed by being struck by a train near Jamesburg, N. J., August 21, aged 65.

Walter C. Lohr, M.D. Milwaukee Medical College, 1905, of Denmark, Wis., died at the home of his parents, near West Bend, Wis., August 25, from sarcoma of the breast, after an illness of several months, aged 27.

J. T. H. Scott, M.D. New York Medical College, New York City, 1861; a Confederate veteran; for 40 years a practitioner of Barren Plains, Tenn., died at his home in that place, August 18, from tuberculosis.

Gilbert A. Ewing, M.D. Medical College of Ohio, Cincinnati, 1866, who served as hospital steward during the Civil War, died at his home in Jackson, Ohio, from senile debility, August 19, aged 72.

T. R. Seastrunk, M.D. Medical College of the State of South Carolina, Charleston, 1844, died at his home in Burkeville, Texas, August 20, aged 84.

Joseph E. Couper, M.D. Hahnemann Medical College, Philadelphia, 1881, died at his home in Blue Earth, Minn., August 20, from cerebral hemorrhage, after a brief illness, aged 49.

Edgar F. Bonham, M.D. New York University, New York City, 1883, died suddenly at his home in Fairmount Springs, Pa., August 24, while prescribing for a patient, aged 50.

David H. Bradley, of Mayview, Mo., a member of the Lafayette County Medical Society, died at his home, July 12, from heart disease, after an illness of two years, aged 66.

Jefferson C. Farr, M.D. St. Joseph Hospital Medical College, St. Joseph, Mo., 1878, died at his home in Alanthus, Mo., August 21, after a long illness.

H. Clint Bacon, M.D. Jefferson Medical College, Philadelphia, 1868, died at his home in Harveyville, Pa., August 15, from kidney disease, aged 64.

George W. Burns, M.D. Detroit Medical College, 1868, died at his home in Morrison, Ill., July 3, from nephritis, after an illness of six months, aged 63.

William Anson Bliss, M.D. Albany (N. Y.) Medical College, 1866, died at his home in Brooklyn, N. Y., August 19, after a lingering illness, aged 65.

Beker, M. C., acting asst.-surgeon, to the Naval Hospital, Newport, R. I.

Longabaugh, R. I., acting asst.-surgeon, ordered to Naval Hospital, Mare Island, California.

E. C. Taylor, asst.-surgeon, to the *Hancock*, Navy Yard, New York, N. Y.

J. A. Randall, passed asst.-surgeon, to the Navy Recruiting Station, Denver.

H. L. Brown, asst.-surgeon, detached Navy Yard, Washington, D. C., etc., to the Navy Recruiting Station, Pittsburg, Pa., temporary duty; thence home and wait orders.

N. H. Drake, medical inspector, when discharged treatment Naval Hospital, New York, N. Y., to Washington, D. C., Oct. 1, 1906, examination for retirement, then to home and wait orders.

F. W. S. Dean, asst.-surgeon, detached Navy Recruiting Station, Denver, etc., to Washington, D. C., Sept. 6, 1906, examination for promotion, then await orders.

E. L. Jones, asst.-surgeon, detached Naval Hospital, Mare Island, Cal., Sept. 15, 1906, to duty in attendance on the course of instruction at the U. S. Naval Medical School, Washington, D. C., Sept. 29, 1906.

J. E. Gill, asst.-surgeon, to the Navy Recruiting Station, St. Louis, Sept. 1, 1906, for temporary duty, thence to the Navy Yard, Washington, D. C.

F. A. Asserson, passed asst.-surgeon, to *Columbia*, Sept. 4, 1906.

F. H. Brooks, asst.-surgeon, detached *Columbia*, to the Naval Hospital, Newport, R. I., for treatment.

B. H. Dorsey, asst.-surgeon, to the Navy Recruiting Station, Des Moines, Iowa, Sept. 5, 1906.

E. J. Grow, surgeon, detached *Mohican*, to *Ohio*.

H. E. Odell, passed asst.-surgeon, detached *Galveston*, to *Wisconsin*.

G. M. Olson, asst.-surgeon, detached *Wisconsin*, to *Galveston*.

C. P. Kindleberger, surgeon, detached Naval Station, Olongapo, P. I., to *Baltimore*.

H. G. Beyer, medical inspector, detached *Ohio*, to *Rainbow*.

F. E. Sellers, asst.-surgeon, detached *Ohio*, to *Mohican*.

G. H. Barber, surgeon, detached *Wisconsin*, to the Naval Station, Olongapo.

R. Spear, surgeon, detached *Baltimore*, to the Naval Hospital, Canacap, P. I.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital service for the seven days ending August 29, 1906:

Sawtelle, H. W., surgeon, relieved from duty at San Francisco.

Gassaway, J. M., surgeon, relieved from duty at St. Louis and directed to proceed to Philadelphia, assuming command of the service and relieving Surgeon Fairfax Irwin.

Godfrey, John, surgeon, granted leave of absence for seven days, from Aug. 26, 1906.

Godfrey, John, surgeon, granted an extension of leave of absence for fourteen days from Sept. 2, 1906.

Irwin, Fairfax. relieved from duty at Philadelphia, and directed to proceed to Detroit, assuming command of the service at that port, relieving Passed Asst.-Surgeon Grubbs.

Carmichael, D. A., and Wertenbaker, C. P., surgeons, and Rucker, W. C., asst.-surgeon, detailed to represent the service at the meeting of the Association of Military Surgeons, Buffalo, N. Y., September 11-14, 1906.

White, J. H., surgeon, directed to proceed to Natchez, Miss., for special temporary duty, on completion of which to rejoin his station.

Oakley, J. H., passed asst.-surgeon, granted twenty days' leave of absence, from Aug. 30, 1906.

Grubbs, S. B., passed asst.-surgeon, relieved at Detroit and directed to proceed to St. Louis, assuming command of the service and relieving Surgeon J. M. Gassaway.

Lumsden, L. L., passed asst.-surgeon, leave of absence granted for two months, from June 1, 1906, amended to read one month only.

Corput, G. M., passed asst.-surgeon, granted one month's leave of absence, from Aug. 30, 1906.

McLaughlin, A. J., passed asst.-surgeon, granted leave of absence for one month, from Aug. 15, 1906.

Ward. W. K., asst.-surgeon, granted leave of absence for five days, from Aug. 20, 1906, under paragraph 191 of the Regulations.

Hunt, Reid, chief, division of pharmacology, detailed to attend the meeting of the Council on Pharmacy and Chemistry of the American Medical Association. Indianapolis, Sept. 1, 1906.

Harkin, F. McD., acting asst.-surgeon, granted leave of absence for twelve days, from Aug. 28, 1906.

Marsh, W. H., acting asst.-surgeon, granted leave of absence for nine days from Sept. 8, 1906.

Taylor, A. S., acting asst.-surgeon, granted leave of absence for sixteen days, from Aug. 19, 1906.

Townsend, Wesley, acting asst.-surgeon, granted leave of absence for seven days.

Woods. C. H., pharmacist, granted leave of absence for seven days, under paragraph 210 of the Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, Public Health and Marine-Hospital Serive, during the week ended August 31, 1906:

SMALLPOX—UNITED STATES.

New York: August 11-18, 1 case.

Texas: Houston, August 11-18, 1 case.

Washington: State, July 1-31, 5 cases; Spokane, August 11-18, 1 case; imported.

China: Niuchwang, July 7, 1 case.

France: Marseilles, July 1-31, 5 deaths.

Gibraltar: August 5 12, 1 case.

Great Britain: Liverpool: August 4-11, 1 death.

India: Bombay, July 17-24, 3 deaths; Calcutta, July 7-14, 3 deaths; Karachi, July 15-22, 4 deaths; Madras, July 14-20, 3 deaths; Rangoon, July 7-14, 3 deaths.

Italy: General, July 26-August 9, 18 cases.

Nicaragua: Bluefields, August 2-9, 1 case.

Russia: Moscow, July 21-August 4, 7 cases, 4 deaths; Odessa, July 28-August 4, 2 cases.

Siberia: Vladivostock, July 5-14, 3 cases, 1 death.

Spain: Barcelona, August 1-10, 11 deaths; Cadiz, July 1-31, 1 case.

YELLOW FEVER.

Cuba: Habana, August 25, 1 case.

Mexico: Merida, August 5-11, 8 cases, 3 deaths; Tierra Blancha, August 5-11, 1 case, 1 death; Vera Cruz, August 21, 1 case.

CHOLERA—INSULAR.

Philippines: Manila, June 30-July 14, 268 cases, 243 deaths; Provinces, July 7-14, 247 cases, 177 deaths.

CHOLERA.

India: Bombay, July 17-24, 97 deaths; Calcutta, July 7-14, 8 deaths; Madras, July 14-20, 9 deaths; Rangoon, June 30-July 7, 1 death.

Straits Settlements: Singapore, May 30-June 12, 2 cases 2 deaths.

PLAGUE.

Australia: Adelaide, July 12, 1 case on steamship *Britania*; Fremantle, June 23-30, 1 case; Sydney, June 23-30, 2 cases 1 death.

Arabia: Djeddah, July 16-22, 11 cases; 11 deaths.

Brazil: Bahia, June 30-July 28, 5 cases, 3 deaths.

China: Amoy, July 24, epidemic.

Greece: Athens, July 21-26, 2 deaths.

India: Bombay, July 17-24, 34 deaths; Calcutta, July 7-14, 10 deaths; Karachi. July 15-22, 17 cases, 16 deaths; Rangoon, June 30-July 14, 319 deaths.

Peru: Lima, July 9, 3 cases; Mollendo, July 9, 4 cases; Palta, July 8, 8 cases: Trujillo ,June 9, 3 cases.

Society Proceedings

COMING MEETINGS.

Med. Soc. of the State of Pennsylvania, Bedford Springs, Sept. 11-13.
Washington State Medical Association, Spokane, Sept. 11-13.
Assn. of Military Surgeons of the U. S., Buffalo, N. Y., Sept. 11-14.
Am. Assn. of Obstetricians and Gynecol., Cincinnati, O., Sept. 20-22.
American Electro-Therapeutic Association, Philadelphia, Sept. 18-20.
Medical Association of District of Columbia, Washington, Oct. 2.
Idaho State Medical Society, Lewiston, Oct. 4-5.
Colorado State Medical Society, Denver, Oct. 9-11.
Delaware State Medical Society, Wilmington, Oct. 9.
Medical Society of Virginia, Charlottesville, Oct. 9-11.
Kentucky State Medical Association. Owensboro, Oct. 10-12.
Vermont State Medical Society, Barre, Oct. 11-12.
American Association of Railway Surgeons, Chicago, Oct. 17-19.

AMERICAN ROENTGEN RAY SOCIETY.

Seventh Annual Meeting, held at Niagara Falls, N. Y., Au 23-30, 1906.

The President, Dr. Henry Hulst, Grand Rapids, Mich., i the Chair.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. Preston M. Hickey, Detroit; vice-presidents, Dr. Percy Brown, Boston; Dr. S. Cummings, Toronto; Dr. Arthur Holding, Boston; Dr. George E. Pfahler, Philadelphia; Dr. George H. Stover, Denver; secretary, Dr. George C. Johnston, Pittsburg; treasurer, Dr. L. E. Custer, Dayton, Ohio; executive committee, Dr. Joseph F. Smith, Chicago; Dr. F. H. Baetjer, Baltimore; Dr. Kennon Dunham, Cincinnati.

The time and place of the next meeting are to be decided later by the executive committee.

(To be continued.)

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

(Continued from page 707.)

SECTION ON PSYCHOLOGY.

The session of the Section on Psychology was presided over by Dr. William Julius Mickle of London.

Symposium on General Paresis.

Etiology.—Dr. Allen R. Diefendorf, Middletown, Conn., argued for the greater consideration of other causes in conjunction with syphilis, especially traumata of a mental sort, such as excessive strain, shock, worry, etc. He freely admitted the predisposing influences of syphilis, but said that syphilis alone is not entirely adequate as a cause. In the discussion of the paper the consensus of opinion was that general paresis, in its ultimate etiology, is a product of syphilis.

Symptoms.—Dr. William J. Mickle, London, in introducing the general discussion in the Symposium on General Paresis, read an exhaustive paper covering the symptomatology and pathology with the pathogenesis and prognosis. Acute delirium, in some obscure diseases, is often due to and is associated with general paralysis. So likewise are acute microbic infections and bromids and other intoxications behind the paretic manifestations. Sometimes there is a relationship or at least an association between paranoia and deliria and general paralysis. Four general types of general paresis may therefore be readily recognized. The first includes the degenerates with deliria, but without the physical signs; in the second are the alcoholic and toxic dements; the third represents paranoiac degenerates, while the fourth includes the degenerates that ultimately become demented. In all of these cases dementia is the cardinal manifestation. This gives a broad conception to the term dementia paralytica. Pathologically, the disease is a meningo-encephalitis. There is a double morbid process going on, the one being parenchymatous and degenerative in character, the other interstitial and inflammatory, or at least vascular. Dr. Mickle did not consider the disease so hopeless as many do. Sometimes there is a partial recovery, with only the faintest tracing left of the previous grandiosa ideas. No somatic symptoms remain at all. The individuals go about their work for years as not only harmless but as useful citizens. The author claims that there is recovery from general paresis, because the disease is terminated when there is a separation and disposal of the mental or psychic symptoms. A partial recovery of this sort has been known to continue for thirty or forty years.

The New Psychology.

Dr. Alfred G. Scofield, London, briefly explained the new psychology. He emphasized the existence of the two minds, the conscious and the subconscious or unconscious. Each has its own particular diseases. For example, hysteria, he believes, is disease of the subconscious mind, whereas many of the ordinary mental diseases are affections of the conscious mind.

Staining the Cerebral Nervous System and Relation of Epilepsy to the Central Nervous System.

Dr. John Turner, Brentwood, Essex, presented these two interesting papers, largely illustrated with stereopticon views, showing the cellular changes of the vascular alterations found postmortem in epilepsy.

Cerebral Localization.

Dr. Charles K. Mills, Philadelphia, presented in abstract his paper on "Cerebral Localization in the Study of Psychiatry." After giving a brief historical sketch of his efforts and those of others in this line, the author argued that psychic symptoms, generally in their last analysis—hallucinations, illusions, delusions—are often the result of sensory-cortical disease. Clinical experience and postmortem observations occasionally demonstrate this fact. Psychologic analysis, logic and physiologic data all go to uphold the thesis that mind is the product of brain activity. The brain is a compound, complicated organ, with the working of whose parts (cortical) we are becoming pretty accurately acquainted. The functions of these parts or localizations are easily recognized, singly or in association, as lying behind what we now denominate as psychic manifestations. If this be so, then a disturbance in these psychic manifestations may well be expected to be accounted for on the basis of some cortical brain lesion. This offers a possible physical basis for psychiatry and will remove psychiatry from the plane of a mere functional to that of an organic science. In consonance with this conception of psychiatry, the author detailed a classification of mental diseases different from any hitherto proposed, and based on teratologic and pathologic grounds.

DISCUSSION.

Dr. L. Harrison Mettler, Chicago, in discussing this paper, said that, in general, the position taken by Dr. Mills was incontrovertible. It was an advanced view of psychiatry which would ultimately lead to the abolition of psychiatry as a special department of medicine or the reduction of it to the position of being a part of neurology. The newer physiologic psychiatry has already practically reduced all psychic manifestations to a sensory-motor basis. An idea is the product of the sensory-motor reactions, and all psychoses are the outgrowths ultimately of ideas. If this be so, it follows that the functional interplay of the various sensory-motor centers of the brain, whether in conjunction with, or apart from the inhibitory influence of the prefrontal lobes, underlies the elaboration of what we now call psychic exhibitions. *Per contra,* therefore, any disease or damage of this interplay must necessarily to a greater or less extent provoke an abnormal psychic display. The cortex is not the only sensory-motor basis of mind, for mind is really a mere expression for our reaction to environment. It represents our whole relational life. Sensation and motility underlie its presentations, but sensations and motility are co-extensive with the whole nervous apparatus, and its relationship to the extra-corporeal world, the somatic world and the world of its own physical activities. Hence, mind, is a mere product, not an entity; its diseases are merely symptomatic, and not integral. On this basis, mental diseases are merely exhibitions of the functional reaction of the individual, as shown, preëminently through the nervous system, and as the essayist has shown, the cerebral cortex, particularly in its prefrontal inhibitory workings. It is somewhat along this line that Wernicke worked in his efforts to solve psychiatric phenomena on the basis of known psychologic data in connection with the cortex.

Dr. Charles H. Hughes, St. Louis, said that he had always regarded insanity as a disease, and being a disease as having as physical basis, a lesion of some part, though the nature of this lesion, is usually beyond our present powers of investigation.

Epilepsy.

A general discussion on epilepsy was participated in by Drs. W. Alden Turner, London; W. D. Spiller, Philadelphia; Sanger Brown, Chicago; Charles H. Hughes, St. Louis; William P. Spratling, Sonyea, N. Y., and Charles K. Mills, Philadelphia. There was, of course, the usual diversity of views in certain details, but in the main nothing new was advanced.

Sterilization of Undesirable Denegerates.

Dr. Robert Rentoul, Liverpool, advanced extremely radical views on this subject, and his paper provoked a great deal of discussion. The author proposed that a certain class of defectives, both men and women, should be operated on in such a manner that the sexual desire and the power of sexual intercourse should not be molested, but that the ability to procreate should be destroyed. The feasibility of such an operation is now well established, but its desirability for the purposes proposed was what raised the question. In Dr. Rentoul's opinion it was considered advisable, and in his paper he made arguments for and against the operation. He did not, however, state the exact class of persons on whom it should be performed.

Insanity of Inebriety.

Dr. Thomas D. Crothers, Hartford, Conn., read a paper which provoked considerable discussion, in which he described the various insane manifestations of the inebriate, and ultimately concluded that all alcoholics, whether heavy or moderate drinkers, should be looked on as mentally unbalanced individuals. There may be a question of the degree of mental instability in individuals, but as to the abnormality of their mental state, he said there could hardly be any question. Annually in the United States about 100,000 men die from the direct or the indirect effects of alcohol. The question of the habit is, therefore, a most serious one, both for the individual and for society. The medical profession does not take the interest in this question that it should, and probably because alcoholism and tippling are not strongly enough looked on as a disease. It is a disease, and the victim should be studied and treated as a distinctly diseased individual.

Devolutional Psychoses.

The "Types of the Devolutional Psychoses" were most interestingly elucidated with the aid of a chart by Dr. C. B. Farrar, Baltimore. The paper should be read as a whole and can not be abstracted satisfactorily.

Dementia Præcox.

Dr. Charles Clarke opened the discussion on this subject. The present status of this nosologic entity, if indeed it be such, was outlined. The author presented no definite opinion, but in a very able way gave the history of the rise and adoption of the term, the various meanings assigned to it by different alienists, and the generally unsettled views as to what is exactly meant by dementia præcox. Kraepelin himself had modified his earlier views, and many were still inclined to dissent from him in his later views. Asylum records showed entries of dementia præcox as high as 40 per cent., and yet Kraepelin had stated that of all mental diseases dementia præcox constituted about 15 per cent. Evidently there must be some explanation for this wide discrepancy. The author, however did not make any explanation.

DISCUSSION.

Dr. Adolph Meyer, New York, in the discussion, after showing that a too narrow limitation has been put on Kraepelin's conception of the disease, described, in a most vivid manner, the symptomatology of the cases usually classified under this head. He then elaborated the newer view in psychology that, after all, mental diseases are rather expressions of the individual's reaction to environment, this reaction being largely determined by the preceding heredity and disciplinary influences. In other ways the victim is not the possessor of a nosologic entity, a something added to him, as it were. He is not to be pigeon-holed into this or that mental catalogue of diseases; but, on the contrary, he is born with certain deficiencies and these are, by vicious training or habit, made worse. As a result, he reacts to his environment in a certain way, in consequence of these influences, and this reaction is his psychic exhibition of mental disease. In this sense, dementia præcox is a condition rather than a disease. It is a degenerate reaction of a defective in his surroundings. It varies in degree, from mere indifference all the way up to complete negativism and dangerous outbursts. As a condition, dementia præcox would be better looked on in perspective as a principle at work and reaching back through the individual's past and ancestry, rather than as an assemblage of present rule-of-thumb symptoms. Not its mere termination, nor even its course is of vital importance, but rather the deterioration of habits, the lowering of instincts which it reveals and which etiologically are the outcome of heredity, neuropathic and disciplinary inadequacies. There is no definite histo-pathology of the conditions. We need further data in this respect. All organs, glands and tissues of the body need to be closely studied, even then we may not reach a complete solution. The individual's own mind must be closely observed in its own workings, for the mind can demoralize and undermine itself.

Dr. F. X. Dercum, Philadelphia, said that dementia præcox was admittedly a bad term. It is merely one of expediency, and represents a condition in which the organism as a whole is defective. At first view, it appears to be a functional state leading to some hope of a better outlook, but as time goes on, this hope is usually turned into disappointment. The patient has lost his adjustment to his environment because he was originally defective. The neuropathic histology is important in the etiology of the disease, though infection, nutrition and discipline may all be influential in one way or another in the elaboration of the disease. It is a question for further solution whether the symptoms are functional or structural, inorganic, toxic or organic. It would seem that we are here dealing, at all events, with some altered nutrition or defective metabolism, and consequently with organic degenerative conditions. Kraepelin, like Lister in regard to antisepsis, has performed a stroke of genius in gathering together all of these manifestations of degeneracy of a particular type, putting them into a class, with subclasses, by themselves, and, in general, indicating their prominent characteristics.

Dr. L. Harrison Mettler, Chicago, said that confusion and discrepancies surrounding the term and the conception of Kraepelin's dementia præcox arose from the fact that an effort was being made to name and crystallize into a distinct disease a psychiatric entity which could not be so crystallized or stamped. In his opinion it was a wrong conception of a psychosis, to attempt to make fixed clinical types of certain varied mental manifestations. As Dr. Meyer had indicated, a psychosis is merely the expression of the individual's reaction to his past and present environment. Each individual has his own mode of reaction, depending on a vast complicated mass of hereditary, structural and functional factors. It is the latter we should look to and subject to the closest scrutiny in order to interpret the why and wherefore of the particular individual's psychic manifestations, study each patient *per se*, as Wernicke was wont to do, and account for his exhibitions on the basis of his own history. As had already been stated by those who uphold dementia præcox as a disease, one had to take a perspective view of the disease in every case, had to look back over its progress and not merely at its present symptomatic presentations. The latter have nothing distinctive, and therefore do not portray any distinct disease-entity. Therefore, the upholders of dementia præcox as a disease virtually admit that they diagnosed not a disease but the individual psychic reactions. Dementia præcox is this and nothing more.

Treatment of the Insane.

Dr. E. W. Ryan, Kingston, Ont., presented a very practical paper on "Public and Modern Hospital Methods and the Treatment of the Insane."

Dr. Thomas J. Mohr, Brockville, Ont., read a paper, equally practical in its illustrations, on "Occupation as a Factor in the Treatment of the Insane."

(To be continued.)

AMERICAN ORTHOPEDIC ASSOCIATION.

Twentieth Annual Meeting, held in Toronto, Canada, Aug. 20-22, 1906.

(Continued from page 705.)

Treatment of Spinal Curvature.

Dr. Frank E. Peckham, Providence, R. I., read a paper entitled "The Treatment of Rotary Lateral Curvature of the Spine. Results." For purpose of treatment, the author considers only two factors, notation and rigidity. The greater the rotation and rigidity, the worse the prognosis. All non-symmetrical exercises have been discarded, and the results have improved. The exercises given to any one patient are simple and few, but are performed with great effort at exactness and self-correction, under constant supervision. Each patient must come every day for the exercises, and no exercising is done at home. Three pound dumb-bells and occasionally the elastic exerciser are the only apparatus used. Plaster Paris jackets applied with the patient forcibly corrected by means of thrust-rods in a horizontal frame are occasionally needed in rigid cases, but must be followed by faithful gymnastic work.

Results of Posture.

Dr. Henry O. Feiss, Cleveland, read a paper entitled "Demonstration of Models to Illustrate the Mechanical Tendencies of Posture in the Normal." Model of thorax illustrates: (1) With the segmental motion of the thorax and with the tissue resistance of the lateral walls, distortion will take place in the rib walls if there is any elasticity present; (2), lateral bend has a direct tendency to distort them, and twist has a less direct tendency to do so. Model of vertebra and ribs illustrates: (1) Whatever the tendency for motion is present in the vertebra in nature, it will, if freed, tend to move on its own axis, which is distinct from the axis of motion of the thoracic segment; (2) the vertebral axis will divert from the direction of the median line of the base toward the side on which the curve of the rib prevents the greatest convexity.

Dr. Joel E. Goldthwait, Boston, read a paper entitled, "Anterior Flexion of the Upper Angle of the Scapula as a Cause of Persistent Forward Shoulder, as Well as of Pain and Crepitation in the Scapular Region." Anatomic study of the development of the scapula shows the wide variation of the shape of the upper part. The upper part may acquire a forward bend *due to muscle pull* when the shoulders are held habitually forward. The crepitation is due to the forward-bent upper margin of the scapula sliding over the angles of the ribs, causing a mechanical irritation, and is not due to a bursitis, as formerly supposed. The treatment consists in excising the offending upper margin of the scapula. This stops the pain and crepitation. In women, the incision is made low and the flap dissected up so that the scar shall not show above a low-neck dress.

DISCUSSION.

Dr. Robert W. Lovett, Boston, in discussion of the foregoing papers, said that lateral curvature requires exercise in large doses. The German custom is to require four to six hours daily. Why should American orthopedic surgeons be willing to impair their results through under dosage? It is now needed to apply what we know to what we want to do.

Dr. Compton Riely, Baltimore, said that he had some time ago explained the rib distortion in scoliosis by altered tension of the parietal muscles due to a tilt of the pelvis.

Dr. Reginald H. Sayre, New York, said that lateral curvature produced by forces acting twenty-four hours a day could be overcome only by prolonged application of the correcting means used.

Dr. J. T. Watkins, San Francisco, referred to certain cases of scoliosis which had not improved under exercising until *they were put to bed on curved stretchers in the periods between exercising.*

Dr. Gwilym G. Davis, Philadelphia, said that, as the wound in Dr. Ryerson's case was below the point where it could have done much damage to the nerves supplying the abdominal muscles, the trouble, if due to the muscles at all, must be due to the surgeon's incision.

Dr. Ryerson said that he thought the damage to the muscles in his case was not due to the nerves but to separation of the cut ends of the muscles.

Potts' Disease.

Dr. Compton Riely, Baltimore, said that forward tilting of the pelvis is an important factor in production of the deformity, and it is important to restore it to its normal attitude in preventing and reducing pain, paralysis and deformity. Early diagnosis of Potts' disease in the adult is difficult, and is greatly aided by the x-ray taken in such a way as to show abscess.

DISCUSSION.

Dr. John Ridlon, Chicago, said that Potts' disease in adults is commoner than supposed. He reported two cases.

Dr. Charles F. Painter, Boston, said that the abscesses shown in the radiographs might be due to retroperitoneal glands.

Dr. S. C. Baldwin, Salt Lake City, reported a case of Potts' disease in an adult, with deeply cyanosed legs. The cyanosis was relieved by treatment of the Potts'.

Dr. James K. Young, Philadelphia, reported three cases of Potts' disease in adults, in whom the disease had not been suspected. Unilateral pain is a common symptom in adults.

Dr. Joel E. Goldthwait, Boston, said that aneurism must be considered in diagnosis of these cases.

Dr. Arthur T. Gillette, St. Paul, Minn., reported a case relieved by a jacket, in which autopsy proved the trouble to be aneurism.

Dr. Riely said that he made the diagnosis of Potts' disease on the physical signs as well as on the radiograph.

The Etiology of Juvenile Lateral Deformities of the Spine.

Dr Max Boehm, Boston, said that anatomic study shows frequency of structural asymmetries of the spine, consisting of numerical variations, so-called, that is, the occurrence on one side of a vertebra of characteristics of one vertebral type, and on the other side characteristics of another type. These numerical variations occur usually at the cervicodorsal, dorsolumbar, and lumbosacral junctures, and result in such anomalies as atypical sacral wings and cervical ribs. Such asymmetries can readily account for scoliosis. In twenty clinical cases of scoliosis, examined with special care by the x-ray, numerical variations of the kind to be expected from the kind of curve were found in 85 per cent.

DISCUSSION.

Dr. Arthur H. Freiberg, Cincinnati, said that the specimens of spines with numerical variations were singularly free from curvature. Numerical variations will not account for the progressive character of scoliosis. If a short leg does not produce a progressive scoliosis, why should a slight anatomic variation?

Dr. Gwilym G. Davis, Philadelphia, said that unmercial variations would not account for the great preponderance of the right dorsal convex type of curve.

Dr. Boehm said that the anatomic specimens of spines with extensive numerical variations did show curves. The curve does not come on till puberty because up to that time all the vertebræ are of one type, and the potential variations are therefore not operative till then. This accounts also for the progressiveness of scoliosis, though due to a fixed set of variations. A short leg is less fundamentally disturbing to the spine than numerical variations. Preponderance of the right dorsal convex type is dependent on the tendency of anatomic variations to contract the left side.

Resection of Knee to Obtain a Movable Joint.

Dr. Gwilym G. Davis, Philadelphia, read a preliminary report of a case of apparently bony ankylosis, at 130 degrees, with patella adherent, of three years' standing, following acute rheumatism. Excision was done and a flap of fascia and muscle turned in between raw bone surfaces. Mobility was successfully attained.

The Cause of Straddling Gait in Bow-Legs.

Dr. P. Hoffman, St. Louis, said that children with bow-legs usually walk with the legs and feet widely separated. The common explanation is that this is to maintain equilibrium. The more logical explanation is that it is to allow the lower *parts of the legs to be perpendicular to the ground.* With the feet together, the weight would be on only the outer margins of the feet, or else the feet would be pronated, producing in either case foot-strain.

He also read a paper entitled "The Correct Principle in the Construction of Knock-Knee Braces." The x-ray has shown that the deformity in knock-knee is an inward convexity commonly located at the upper end of the tibia, sometimes at the lower end of the femur, sometimes at both places. The deformity is rarely, if ever, at the knee itself. A brace exerting outward pull or pressure on the knee expends its force mainly when the knee is flexed even only a little in rotating the femur. What directly outward pressure on the knee there is acts largely on the lateral ligaments and tends to produce an unstable joint. The correct brace should exert corrective force directly on the abnormal curve or curves and not on the knee.

Protective Immunization Against Joint Tuberculosis.

Dr. Charles F. Painter, Boston, reported work on immunization by small repeated doses of tuberculin, not more than ¼ mg. at a dose. The work thus far is only preliminary.

DISCUSSION.

Dr. Joel E. Goldthwait, Boston, said that the research conducted by Dr. Painter incidentally showed the nearly constant presence of tubercle bacilli in smears of the pus from cold abscesses. This pus should be as cautiously handled, therefore, and disposed of as tuberculous sputa.

Exceptional Rachitic Distortions of the Legs.

Dr. Wallace Blanchard, Chicago, remarked that skiagraphy shows occasional unusual types of deformities. These should be corrected according to the particular indications. The osteoclasp in all cases should be applied on the external surface of the leg.

(To be continued.)

State Boards of Registration

COMING EXAMINATIONS.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, September 11-12. Secretary, Edwin B. Harvey, Boston.

IOWA State Board of Medical Examiners, Capitol Building, Des Moines, September 11-13. Secretary, J. F. Kennedy, Des Moines.

OKLAHOMA Board of Medical Examiners, Guthrie, September 25. Secretary, J. W. Baker, Enid.

NEW YORK Boards of Medical Examiners, Albany, September 25-28. Chief of Examining Division, Charles F. Wheelock, Albany.

UTAH State Board of Medical Examiners, Salt Lake City, October 1. Secretary, R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, October 1-2. Secretary, Ancil Martin, Phoenix.

COLORADO State Board of Medical Examiners, Denver, October 2. Secretary, S. D. Van Meter, Denver.

IDAHO State Board of Medical Examiners, Lewiston, October 2. Secretary, J. L. Conant, Jr., Genesee.

MONTANA Board of Medical Examiners, Senate Chamber, The Capitol, Helena, October 2. Secretary, Wm. C. Riddell, Helena.

MINNESOTA State Board of Medical Examiners. Old Capitol Building. St. Paul, October 2-4. Secretary, W. S. Fullerton, St. Paul.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, October 2-4. Secretary, H. M. Wheeler, Grand Forks.

RHODE ISLAND State Board of Health, Room 313, State House, Providence, October 4-5. Secretary, Gardner T. Swarts, Providence.

GEORGIA Board of Medical Examiners (Regular), Capitol, Atlanta, October 9. Secretary, E. R. Anthony. Griffin.

ARKANSAS State Medical Examining Board, Little Rock, October 9. Secretary, J. P. Runyan, Little Rock.

KANSAS State Board of Medical Registration and Examination, State House, Topeka, October 9. Secretary, F. P. Hatfield, Grenola.

MICHIGAN State Board of Registration in Medicine, Lansing, October 9. Secretary, B. D. Harison, Detroit.

MISSISSIPPI State Board of Health, The Capitol, October 9. Secretary, J. F. Hunter, Jackson.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, October 11. Secretary, Geo. C. Ober, Washington.

NEW JERSEY State Board of Medical Examiners, Trenton, October 16-17. Secretary, J. W. Bennett, Long Branch.

TEXAS State Board of Medical Examiners, Houston, October 16-18. Secretary, T. T. Jackson, San Antonia.

FLORIDA Board of Medical Examiners (Regular), Jacksonville, October 17-18. Secretary, J. D. Fernardez, Jacksonville.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, October 17-19. Secretary, J. A. Egan, Springfield.

LOUISIANA State Board of Medical Examiners, New Orleans, October 19-20. Secretary, F. A. Larue, New Orleans.

INDIANA Board of Medical Registration and Examination, Indianapolis, October 23-25. Secretary, W. T. Gott, Indianapolis.

Indiana May Report.—Dr. W. T. Gott, Secretary of the Indiana Board of Medical Registration and Examination of Indiana, reports the written examination held at Indianapolis, May 22-24, 1906. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 750 out of 1,000 possible points. The total number of candidates examined was 179, of whom 170 passed, including 7 osteopaths, and 9 failed, including 3 osteopaths. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Indiana Med. Coll. (1906) 76.1, 76.1, 77.4, 77.4, 79.7, 80.5, 81, 81, 81.5, 82, 82.1, 82.1, 82.8, 83.6, 84.5, 85.1, 85.4, 85.8, 85.9 86, 86.2, 86.8, 86.9, 86.9, 87, 87.3, 87.4, 87.5, 87.6, 87.6, 87.7, 87.9, 87.9, 88, 88, 88.2, 88.2, 88.3, 88.5, 88.5, 88.6, 88.7, 88.7, 8.88, 88.9, 89, 89, 89.1, 89.1, 89.1, 89.2, 89.3, 89.4, 89 4, 89.5, 89.6, 89.8, 90, 90.1, 90.2, 90.2, 90.2, 90.4, 90.4, 90.5, 90.6, 90.6, 90.7, 90.7, 90.7, 90.7, 90.7, 91, 91.1, 91.1, 91.1, 91.2, 91.2, 91.2, 91.2, 91.3, 91.4, 91.5, 91.6, 91.6, 91.6, 91.9, 92, 92, 92.1, 92.1, 92.2, 92.4, 92.5, 92.5, 92.5, 92.6, 92.6, 92.6, 92.9, 93.2, 93.3, 93.4, 93.8, 93.9, 94.2.		
Medical College of Indiana	(1904)	91.2
Physio-Med. Coll. of Indiana (1904) 88.4; (1906) 84.7, 86.9, 88.2, 89.4, 93.3.		
Eclectic Med. Coll. of Indiana (1905) 79.7; (1906) 86.2, 87.4, 88.3, 89.8.		
Ft. Wayne Coll. of Medicine	(1905)	78.9
Hahnemann Med. Coll., Chicago	(1906)	88.5, 89.6
Bennett Eclectic Med. Coll., Chicago	(1905)	90.3 91.8
Chicago Homeo. Med. Coll.	(1904)	91.2
Illinois Med. Coll. (1905) 87.6, 89.3, 89.4, 89.5	(1906)	85.7 86.4
Rush Med. Coll.	(1902)	92.7
College of P. & S., Chicago (1894) 93;	(1905)	85.8
Northwestern Un'v. Med. School	(1904)	89 6
University of Louisville (1905) 83.4, 89.1,		89.5
Kentucky School of Med.	(1905)	84.6
Kentucky University	(1905)	85.6 88 3
Louisville Med. Coll.	(1903)	91.3
Southwestern Homeo. Med. Coll.	(1905)	83.9
Johns Hopkins Med. School	(1904)	89.8
Baltimore University	(1897)	82.9
University of Michigan	(1905)	89.2
College of P. & S., St. Louis	(1891)	89.5
St. Louis Univ. (Mar on Sims Beaumont Med. Coll.)	(1905)	81.7
New York University	(1891)	94.4
Toledo Med. Coll.	(1905)	86.
Eclectic Med. Inst. (1884) 84 9; (1903) 75.5; (1904) 83; (1905) 93.2. (1906) 82.8, 86, 86.6, 91.3.		
Jefferson Med. Coll.	(1905)	91.1
Med. Coll. of Ohio	(1902)	90.4
Ohio Med. University	(1906)	93.7
Wisconsin Coll. of P. & S.	(1906)	94.3
University of Toronto	(1905)	89.7
Edinburgh University, Scotland	(1901)	89.2

FAILED.

Indiana Med. Coll.	(1906)	63.3, 72.1, 72.2, 74.1
Med. Coll. of Indiana	(1904)	69.2
Southwestern Homeo. Med. Coll.	(1903)	73.3

The following questions were asked:

ETIOLOGY AND HYGIENE.

1. Give etiology and hygienic management of scarlatina. 2. Croupous pneumonia. 3. Pulmonary tuberculosis. 4. Typhoid fever. 5. Summer diarrheas of infancy and childhood.

LARYNGOLOGY AND RHINOLOGY.

1. Give diagnos's and treatment of nasal polypi. 2. What constitutional diseases may present local manifestations in the nose?

MEDICAL JURISPRUDENCE.

1. What organ is generally the first and which the last to undergo putrefaction? 2. How would you distinguish between an incised wound made before and after death?

NEUROLOGY.

1. Give etiology of multiple neuritis. 2. What are the diagnostic symptoms of cerebral tumor? 3. Give diagnostic symptoms o multiple sclerosis.

OPHTHALMOLOGY AND OTOLOGY.

1. Give symptoms, diagnosis, prognosis and treatment of gonorrheal conjunctivitis. 2. Give etiology and treatment of blepharitis. 3. Give tests for hearing, or how would you test hearing?

PEDIATRICS.

1. (a) When should the treatment of congenital talipes be commenced? (b) State best method for treatment. 2. Give etiology and treatment of cholera infantum.

MATERIA MEDICA AND THERAPEUTICS (ECLECTIC).

1. Give indications for an emetic and name remedies you would use to produces emesis. 2. Name two remedies classed as emmenagogues and give specific ind cations for each. 3. Give specific indications and dose for (a) bryonia, (b) ipecac, (c) veratrum, (d) quinin and (e) rhus tox. 4. What would you give a patient who presented symptoms as follows: Flushed face, unnaturally bright eyes and contracted pupils, with increased heat of the head? 5. What would you give a patient with symptoms as follows: Dusky redness of the surface, patient dull and inclined to sleep, eyes dull and pupils contracted? 6. Name two anthelmintics, giving dose of each. 7. Give indications for an alkali. 8. Give indications for an acid. 9. Write a prescription in which you use sodii sulphatis, and give indications for its use. 10. Name three antiseptics.

THEORY AND PRACTICE OF MEDICINE (ECLECTIC).

1. How would you distinguish the convulsions of tetanus from an overdose of strychnin? 2. Give symptoms, differential diagnosis and treatment of acute catarrhal gastritis. 3. Give etiology, symptoms, differential d agnosis and treatment of arterioscleros 4. Give symptoms, complications, diagnosis, prognosis and tre ment of Addison's disease. 5. Give symptoms, diagnosis and trea ment of uremia. 6. Give treatment of neurasthenia. 7. Ho would you differentiate acute softening of the brain from hemo rhage? 8. What is your idea of constipation and how would yo treat it? 9. Write a prescription for the hemorrhage that ofte occurs in typhoid fever. 10. Give differential diagnosis and treatment of diphtheria.

MATERIA MEDICA AND THERAPEUTICS (HOMEOPATHIC).

1. Give indications for the use of iodoform internally. 2. Give the physiologic action and therapeutic indication for hydrastis canadensis. 3. Mention indications for employing massage. 4. Give therapeutic individuality of kali iodatum. 5. Name two remedies frequently indicated in dropsical effusions. 6. What symptoms determine choice of sulphur in chronic diseases? 7. Differentiate the cough symptoms of ipecacuanha and sanguinaria. 8. Give therapeutic individuality of kali chloricum. 9. Give guiding symptoms of apis mellifica. 10. Name bowel symptoms of mercurous sol.

THEORY AND PRACTICE OF MEDICINE (HOMEOPATHIC).

1. Give diagnosis and etiology of osteomyelitis. 2. State varieties of neuritis and most common cause of each. 3. Name three remedies most frequently indicated in the treatment of chronic nephritis. 4. Give the forms of pneumonia, and differentiate from acute bronchitis. 5. Give etiology, prognosis and treatment of acute articular rheumatism. 6. Define hypnosis. Should it ever be employed in the treatment of disease? If so, when? 7. Give your idea of the merits of suggestive therapy. What class of diseases is most easily influenced by mental processes? 8. Define phlebotomy, and state when it should be employed. 9. Define (a) contagion, (b) infection, and give means for prevention of each. 10. Name two diseases affecting the glandular system, and give remedies ordinarily indicated in each.

MATERIA MEDICA (PHYSIOMEDICAL).

1. What are the therapeutic properties of caulophyllum? 2. What are the properties of cimicifuga race and what is the dose of the fl. ext.? 3. Name three remedial agents that are nervine relaxants. 4. Name agents that increase renal action. 5. Give the therapeutic properties of quinin. 6. In what condition and under what circumstances would you give hydrochlorate of quinin in preference to the sulphate? 7. Give conditions in pneumonia in which you would combine capsicum and lobelia, and when would you give lobelia alone, and why? 8. Mention five sanative agents that promote increased hepatic action. 9. In what particulars do the cactus grand, and the cerusbonplandii differ in influencing the heart's action, and why? 10. What is the dose and the therapeutic influence of fl. ext. pulsatilla?

THEORY AND PRACTICE (PHYSIOMEDICAL).

1. What are the most common causes of secondary anemia? 2. Give pathognomonic symptoms and treatment in the first stage of pneumonia. 3. A child, one year old, hitherto healthy, has sudden seizure of pain in the region of the stomach; gets cold extrem-

ities, followed by temperature of 101°. Similar attacks follow each day, fever gradually increasing after each attack, declining after each exacerbation, but not entirely disappearing Tongue broad, pale, with white fur Appetite variable digestion fair. Bowels irregular spleen slightly enlarged After six months there is very marked anemia Number of leucocytes unchanged number of red corpuscles much reduced Hemoglobin 40 Give diagnosis and treatment 4 Differentiate between typhoid and appendicitis 5 How would you manage a case of pulmonary tuberculosis in an ordinary family and home, with a view to the prevention of infection of others? 6 Give diagnostic symptoms of rubeola and scarlatina 7 What are the positive evidences of anemia and what is the treatment if due to malaria the plasmodia being present in the blood? 8 In a case with no evidence of organic lesions, the patient complains of pain referred to the stomach and esophagus with a feeling of constriction, symptoms relieved by food in the stomach, worse when stomach is empty bowels sore and painful, with diarrhea What would be your diagnosis and treatment and directions as to diet? 9 At what points are the lesions in each of the four cardinal types of aphasia and how is each type manifest? 10 Give differential diagnosis of apoplexy and epilepsy with mode of management of each.

GYNECOLOGY.

1. Define (a) sepsis, (b) asepsis; (c) give aseptic technic. 2 Give symptoms and diagnosis of laceration of the cervix 3. Give (a) indications for hysterectomy (b) technic of vaginal hysterectomy. 4 Give surgical treatment of cystitis 5 Give technic of curettage What is its therapeutic purpose? 6 Give differential diagnosis of benign adenoma (polypoid endometritis) and malignant adenoma (carcinoma).

CHEMISTRY.

1 Give difference between methyl and ethyl alcohol and give common name for each 2 What is muriatic acid and its formula? 3 What is specific gravity of healthy urine? 4 Give a reliable test for albumin, bile, blood and sugar in the urine 5, Give test for free acid in the stomach contents

ANATOMY.

1 Name and locate the colonic flexures 2 Describe the celiac axis 3 Give the boundaries of the normal liver 4 Give the names and origin of the nerves that supply the tongue 5 Describe the internal saphenous vein 6 Give the relations of the external carotid artery 7 Name the large blood vessels that comprise the portal system of veins 8 Make a drawing showing the origin and communications of the spinal accessory, pneumogastric and glossopharyngeal nerves 9 Describe the os calcis Give its relations 10 What bones of the tarsus are on the proximal side of the line of Chopart's amputation?

MATERIA MEDICA AND THERAPEUTICS (REGULAR).

1 Give the derivation of adrenalin and its physiologic action 2 Name a vasoconstrictor, give its effect on blood pressure and an indication for its therapeutic application 3 Name a vasodilator, give its effect on blood pressure and an indication for its therapeutic application 4 Give technic of hypodermoclysis and an indication for its use 5 What is the composition of normal salt solution? 6 What value do you attach to sunlight and fresh air as therapeutic agents? 7 Name an efficient urinary antiseptic. 8 How would you apply cold water as an antipyretic? 9 Name an antidote to arsenic 10 Name an antidote to carbolic acid

INTERNAL MEDICINE (REGULAR).

1 Give a predisposing cause, symptoms and treatment of cerebral hemorrhage 2 What is the significance of diminution or absence of the second sound of the heart during the progress of a croupous pneumonia? 3 Describe Cheyne Stokes' respiration and give its prognostic significance 4 On what findings would you base a diagnosis of acute Bright's disease? 5 Name some remote pathologic results of syphilis 6 Give symptoms and diagnosis of scarlatina and name some of the most frequent sequelæ of the disease 7 Give symptoms and treatment of intestinal hemorrhage of typhoid fever 8 Give common cause and treatment of diarrheas of infancy and childhood 9 How would you treat hemoptysis? 10 Give method of positive diagnosis and treatment of diphtheria

OBSTETRICS.

1 Does Nature ever fail to set in motion forces that commence labor at the termination of full term? If so, state causes and proper procedure 2 Name conditions warranting Cesarean section Give technic of operation 3 Is the production of abortion ever legally justifiable? If so state conditions of justification 4 What advice would you give the *enciente* as to her manner of living during the period of gestation, in order that labor may be made easier? 5 In case positive diagnosis of prenatal death has been established, would you attempt to bring about expulsion of uterine contents? If so, why and when? 6 What foods are most suitable for artificial feeding of the newly born? Give method of modifying or preparing food for best results in artificial feeding 7 State conditions under which the artificial feeding of infants should be undertaken 8 Is puerperal infection preventable? If so give methods of prevention 9 Give management of breech presentation 10 Differentiate the convulsions of eclampsia from hysteria

SURGERY.

1 Give differential diagnosis of appendicitis and small ovarian cyst 2 Name the differential clinical and pathologic points of carcinoma and sarcoma 3 Name the fractures of the skull 4. Give diagnosis and treatment for hemorrhoids 5 Give diagnosis and treatment of Potts' disease 6 What is the best known means for an end to-end anastomosis of the intestine? 7 Give treatment for fracture of middle third of the femur 8 What structures would be divided in an amputation through the middle of the arm? 9 Give diagnosis of gallstones and the technic for the operation 10 Give treatment for stricture of the urethra in the male

PATHOLOGY AND BACTERIOLOGY.

1 What pathologic conditions arise as secondary to mitral insufficiency? 2 What do you understand by the general term degeneration? Name the forms of degeneration 3 Write in columns the names of the various forms of disease produced by bacteria 4 What is the most common pathologic factor in inflammation? 5 Define in contrast sarcoma, fibroma and carcinoma 6 How may the tubercle bacillus be isolated? How may it be cultivated? 7 Mention five varieties of anaerobic bacteria 8 What conditions are necessary for sterilization by steam at low pressure and at high pressure? 9. How would you examine the blood for Fraenkel's pneumococcus? 10 How would you differentiate bacteriologically between tonsillitis and diphtheria?

PHYSICAL DIAGNOSIS

1. Give diagnosis of cardiac hypertrophy affecting (a) the left ventricle, (b) the right ventricle 2 Give physical signs of pericardial effusion 3 Give diagnosis of thoracic aneurism 4 Give respiration rate in (a) the newborn; (b) the adult. 5 How may the normal movements of the diaphragm be rendered visible (Litten's phenomenon)?

PHYSIOLOGY.

1 Explain the difference between the function of the kidney and that of a true glandular organ. 2 What organs of the body are purely excretory in their office? 3 What becomes of the gastric and pancreatic juices after they have performed their offices in the digestion of a meal? 4 What do you understand by common sensation and special sensation? 5 Give physiologic definition of the terms systole and diastole, and give the behavior of the blood current during each 6 Define and give the significance of the dicrotic pulse 7. Give the physiologic composition of the blood, with the functions of each ingredient.

Vermont July Report.—Dr W. Scott Nay, Secretary of the Vermont State Board of Medical Registration, reports the written examination held at Burlington, July 10 12, 1906. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 33, all of whom passed. The following colleges were represented:

PASSED

College	Year. Grad	Per Cent
University of Louisville	(1905)	75.2
Boston University	(1906)	77.4
Albany Med Coll	(1905)	84
Dartmouth Med Coll	(1904)	79.2
University of Vermont	(1904) (1905) (1906)	77.1 79 75.1, 76.1, 76.1, 76.6, 76.7, 76.9, 77.1, 77.4, 77.6, 77.9, 78.1, 78.1, 78.1, 78.8, 79, 79.1, 79.1, 79.2, 79.2, 80.2, 80.7, 80.7, 81.2, 81.6, 81.7, 81.8, 84.3

The following questions were asked:

PRACTICE OF MEDICINE

1 Give the differential diagnosis between chronic bronchitis, tuberculosis of the lungs, pneumonia and pleurisy 2 Give the etiology, symptoms and proper treatment of measles 3 Describe urticaria What are its most common causes and what treatment would you recommend for it? 4 What are the symptoms and general course of aneurism of the aorta and how would you treat a case? 5 Describe the life history of *Tænia solium* the symptoms which it causes and its proper treatment 6 Describe the etiology and pathology of cirrhosis of the liver 7 Describe the pathology and symptoms of Addison's disease 8 How would you distinguish pyelitis from cystitis? Give treatment for each 9. Give causes, symptoms and proper treatment for malarial fever 10. Give etiology, symptoms and prophylaxis of yellow fever

SURGERY.

1 Name the principal bacteria and the surgical diseases produced by each 2 Name the varieties of wounds and seven methods of stopping hemorrhage 3 Name the usual methods of healing in wounds and describe how it is accomplished 4 Describe thrombosis and embolism, how caused symptoms and treatment 5 Give cause, symptoms and treatment of caries and necrosis 6 Give causes and treatment of ununited fracture. 7. Describe in detail the method of ligating arteries 8 Differentiate between coma from injury and apoplexy uremia, epilepsy, diabetes, opium poisoning and alcoholic intoxication 9 Diagnose a case of hip joint disease 10. Describe in detail removal of the breast.

LEGAL MEDICINE

1. Define syncope, asphyxia and coma Give examples 2 What is the difference between a medicine and a poison? 3 Explain the terms mania monomania, dementia and idiocy. 4 On what would you base your opinion that a child had been born alive at term? 5. Give causes of death during the birth of a child

THERAPEUTICS.

1 For what particular symptoms would you prescribe the following? Grindelia robusta, hyoscyamus hydrastis gelsemium, cactus, arom sulph ae, veratrum viride, croton oil 2 Write a prescription for each of the following conditions. Hematuria, cystitis, impetigo, herpes zoster, capillary bronchitis, acute rheumatism 3 What drugs would be indicated in the treatment of erysipelas? 4 How would you manage a case of belladonna poisoning? 5 Give the external and internal uses of (a) silver nitrate, (b) carbolic acid

CHEMISTRY

1. (a) What is meant by the term molecule? (b) What is believed in regard to movements of molecules in gases, liquids solids? 2 In case of defective drainage causing sickness, how would you detect such in water? State your tests 3 How would you test a suspected mixture for arsenic: State the test you would use and the reactions What other substances might be mistaken for arsenic and how can they be distinguished? 4 (a) What is the difference between a ferrous and a ferric salt? (b) Illustrate the difference between symbol, formula, equation What information does each convey? 5 (a) Name the organic and inorganic constituents of urine (b) Name the abnormal constituents of urine and give tests for same

OBSTETRICS

1 Give symptoms of pregnancy 2 Give treatment of abortion. 3 Describe a normal labor 4 Give mechanism of face presentation 5 How and for what reasons would you perform version? 6 What complications may result from infection after delivery?

7. What is *eclampsia*? 8. What is inertia and cause of same? 9. Describe application of forceps to a head presentation. 10 What is treatment of postpartum hemorrhage?

GYNECOLOGY.

1. Give symptoms indicative of pelvic disease. 2. Treatment of ovaritis. 3. Differentiate uterine fibroid and ovarian cyst. 4. Give treatment of vaginal catarrh. 5. What is amenorrhea and when does it occur?

PHYSIOLOGY.

1. Give the classifications of efferent nerves. 2. Give the properties and functions of the medulla oblongata. 3. State the physiologic properties of nerve cells. 4. Give the action of the salivary secretion on starch. 5. Give the products of intestinal digestion and state the disposition made of these products. 6. Describe the plasma of the blood and give its constituents. 7. Describe the changes of the blood during coagulation. 8. Name the most frequent abnormal constituents of urine and way of detection in three of them. 9. Describe the lymphatic system, giving its functions. 10. How is the temperature of the body kept at the standard?

HYGIENE.

1. Name the contagious diseases for which you would quarantine. 2. Give the rules and time for which you would quarantine four of them. 3. State the duties and obligations of the family physician in regard to the hygiene of school children. 4. Tell how you would build and furnish a school house, observing hygienic rules. 5. How would you manage a case of phthisis pulmonalis to avoid danger to other members of the family?

THEORY AND PATHOLOGY.

1. Name five self-limited diseases. 2. Why does not every person exposed *to an infectious disease take it? 3. Explain the more* recent theories of immunity. 4. What are phagocytes and what is their rôle in the prevention of disease? 5. What are the symptoms and what are the pathologic changes in progressive bulbar paralysis?

ANATOMY.

1. Name and describe four classes of tissue which enter into the formation of the human body. 2. Describe the bony pelvis and state what bounds the cavity of the pelvis above. 3. Give three general classifications of joints. Describe the elbow joint. 4. Name the muscles of the abdomen and give the origin, insertion, nerve supply and action of any one of them. 5. Name the cavities, openings and valves of the heart. 6. Give the collateral circulation when the brachial artery has been ligated just below its profunda branches. 7. Describe Scarpa's triangle and name its contents. 8. Name the organs and parts of organs located in the left hypochondriac region. 9. Give the columns, fissures and blood supply of the spinal cord. 10. What abdominal viscera and parts of viscera have no peritoneal investment?

BACTERIOLOGY.

1. What are the general requisites for a nutrient media? 2. Name and describe the most common pyogenic organism. 3. How would you prove a certain specific micro-organism to be the cause of a certain specific disease? 4. What is there peculiar in the behavior of the tubercle bacillus toward staining solutions? 5. What micro-organisms would you expect to find in the pus from a psoas abscess?

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Cystitis.

In the treatment of cystitis, Yeo in *Clin. Ther.* recommends the following combinations:

℞. Terebinthinæ (pure)
Ext. gentianæ, āā ....gr. xlv 3|

M. Ft. pil No. xxx. Sig.: One pill three times a day, followed by two tablespoonfuls of lime water in milk.

Or,

℞. Acidi benzoici ....gr. lxxv 5|
Syr. aurantii ....ʒv 20|
Aquæ dest., q. s. ad.................f. ℥x 300|

M. Ft. mistura. Sig.: One tablespoonful every two hours in water.

Or,

℞. Sodii bicarb. ....gr. lxxv 5|
Decoctio uvæ ursi ....℥vi 180|

M. Ft. mistura. Sig.: One tablespoonful every two hours.

If there is a marked catarrhal condition and the urine is of foul odor the following combination is advised:

℞. Resorcini ....gr. xlv-lxx 3-4|65
Aquæ dest. ....f. ℥iii 90|

M. Sig.: To be mixed with an equal quantity of warm water and used as a solution for washing out the bladder in chronic cystitis.

Or,

℞. Acidi borici ....℥ss 15|
Glycerini ....℥i 30|
Aquæ dest., q. s. ad.................f. ℥v 150|

M. Sig.: To be mixed with an equal quantity of warm water and used as an irrigation.

Or,

℞. Aluminis
Zinci sulph.
Acidi carbolici, āā.................℥ss 15|
Aquæ dest., q. s. ad ....f. ℥x 300|

M. Ft. lotio. Sig.: To be diluted ten times with sterilized water and about one pint of the mixture to be injected daily into the bladder.

Internally the following combinations are recommended:

℞. Buchu fol. ....ʒii 8|
Uvæ ursi fol.................ʒii 8|
Aquæ ferventis ....f. ℥vi 180|

Macerate for two hours, strain, and add:

Liquoris potassæ ....f. ʒi 4|
Tinct. cinnamomii,
Tinct. hyoscyami, āā.................f. ʒiii 12|

M. Ft. mistura. Sig.: Two tablespoonfuls three times a day.

In case of phosphatic deposits in the urine the following combination is recommended:

℞. Acidi hydrochlor. fort.................m. iii |20
Aquæ dest. ....f. ℥vi 180|

M. Sig.: To be used as a wash for the bladder.

Psoriasis.

According to Hyde, arsenic ranks first in the treatment of psoriasis and he further emphasizes that whatever failures are experienced with this preparation in the treatment of other diseases its value must not be ignored in this one. It is unsuited, however, for all cases of psoriasis occurring with acute symtoms, such as subjective sensations and unusually vivid redness of the patches. The preparation usually employed is Fowler's solution, beginning with small doses and gradually increasing the dose to the proper proportions, at the same time keeping the patient under constant observation during its administration.

The arsenate of sodium or the arsenate of iron are sometimes recommended.

In the gouty cases Hyde advises the following combination:

℞. Potassii acetatis ....℥i 30|
Spts. etheris nitrosi ....f.℥ss 15|
Vini colchici ....f. ʒii 8|
Syr. aurantii ....f. ℥iss 45|

M. Sig.: One dessertspoonful after meals in water.

Locally for the eruption, green soap in combination with tar and alcohol serves a good purpose combined as follows:

℞. Tinct. saponis viridis ....℥ii 60|
Olei picis ....f. ℥i 30|
Alcoholis ....f. ℥ii 60|

M. Sig.: Apply locally.

Or,

℞. Saponis viridis ....℥iv 120|
Olei rusci
Glycerini, āā.................f. ℥i 30|
Olei rosmarini ....ʒiss 6|
Spts. vini rectif. ....f. Oss 250|

M. Ft. linimentum. Sig.: Apply locally.

Or,

℞. Sulphuris sublim.
Olei rusci, āā.................℥ss 15|
Saponis viridis
Adipis, āā.................℥i 30|
Cretæ prep. ....gr. l 3|20

M. Ft. unguentum. Sig.: To be applied locally.

Or,

℞. Olei picis ....ʒi 4|
Vel
Olei rusci
Olei amygdali ....℥i 30|

M. Sig.: Apply locally.

The local treatment of the scalp or the face with some of the foregoing combinations can not be carried out because of their disagreeable odor, but as a substitute he recommends the following:

℞. Hydrarg. chloridi mitis ....gr. xxx 2|
Lanolini ....℥i 30|

M Ft unguentum. Sig: Apply locally.

Or,

℞.	Tinct benzoini	ʒss	2	
	Lanolini	℥i	30	

M. Ft unguentum Sig.· Apply locally

Pyelitis.

In cases of chronic pyelitis the following is recommended internally·

℞	Quininæ tannatis	gr. xv	1	
	Sacchari albi	gr. xxx	2	

M Ft cap No vi Sig: One capsule three times a day.

In calculous pyelitis due to lime or uric acid deposits the following may be used:

℞	Sodii phos	℥i	30	
	Sodii bicarb	℥ii	60	
	Lithii carb	ʒiiss	10	

M Ft pulvis Sig: One teaspoonful in a pint of water three times a day.

In the treatment of uric acid calculi Yeo states that excellent results have been obtained by the administration of large doses of glycerin by the mouth, the good effects being due to changes produced in the urine

The amount given is one to four ounces dissolved in an equal quantity of water taken between meals every two or three days for a period of several days Some authors state that it renders the specific gravity such as to produce a change in the position of the calculi in the pelvis of the kidney

Malaria.

In the administration of quinin hypodermically. quinin hydrochlorate is to be preferred, according to J. C. Wilson in his "Text Book of Applied Therapeutics," as follows:

℞	Quin hydrochlor.	gr. lxxv	5	
	Aquæ dest	f. ʒiiss	10	

M Sig· Fifteen drops at one injection

Or the following solution after Kobner's formula·

℞	Quin hydrochlor	gr viii xv		56 1
	Glycerini			
	Aquæ dest, āā	ʒss	2	

M Sig· To be injected at one time, luke warm.

By some authorities the following combination is recommended:

R	Antipyrini	gr vi		30
	Quin hydrochlor	gr xv	1	
	Aquæ dest	f ʒss	2	

M Sig· To be injected at one dose

Wilson recommends the chlorhydrosulphate as follows:

℞	Quin chlorhydrosulphatis	gr lxxv	5	
	Aquæ dest	f. ʒiiss	10	

M Sig: Fifteen drops at one injection.

Quinin sulphate may be given hypodermically when combined with tartaric acid, as follows:

R	Quin sulphatis	gr. xv.	1	
	Acidi tartarici	gr viii		50
	Aquæ dest	f. ʒiiss	10	

M Sig: To be given hypodermically

By the mouth the following combinations are recommended in the *Pract Med Series*·

R	Quin sulph vel hydrochlor			
	Salol, āā	gr. xl	2	65
	Phenacetini	gr. xxx	2	

M Ft cap No xii Sig: One capsule every three hours

Or

R	Quin sulphatis	gr. lxxx	5	
	Acidi hydrochlor. dil			
	Tinct zingiberis			
	Tinct opii camphor, āā	f. ʒii	8	
	Syr limonis	f. ℥ii	60	
	Aquæ, q s ad	f. ℥iii	90	

M Sig: One tablespoonful every four hours in water

To correct the anemia following an attack of malaria the following is advised:

R	Quin sulphatis	ʒiss	6	
	Ferri reducti	ʒi	4	
	Ext nucis vomicæ	gr. viii		50
	Acidi arsenosi	gr. i		06
	Ext colocynth. co	gr. x		65
	Podophyllini	gr. ii		12

M Ft cap No lx Sig: One pill after each meal.

Medicolegal

Aggravation of Effect of Injury By Use of Opiates.

The Supreme Court of North Dakota holds, in the case of Pyke vs. City of Jamestown, that the aggravation of the consequences of a personal injury by the use of opiates, taken under the direction of a reputable physician to alleviate the pain resulting from the injury, is not a defensive fact in an action to recover damages for the injury. The necessity for the use of opiates arises in such case from the negligent act causing the injury, and not from any negligence of the person injured And this, the court suggests, would be true even if the physician erred in his treatment.

Liability of Board of Health Members From Smallpox Hospital.

The Supreme Judicial Court of Massachusetts says, in Barry vs Smith and others, an action against the members of a city board of health for damages from a smallpox hospital located adjoining property of the plaintiff's, that if a rope was put around his driveway and that brought within the hospital grounds by the defendants, or by persons in their presence and under their direction, the defendants were liable. As members of the board of health *they had no right to take the plaintiff's* land without action under the statute. It is not true that a public officer is exempt from liability for all acts done in his official capacity. However, the court assumes that, if a case of smallpox had broken out in the plaintiff's house, his driveway could have been roped off in regulating the disease on his premises as a menace to the public. Moreover, in fixing on the location of the hospital the defendants were exercising a discretion which the Legislature had required them to exercise as public officers, and their decision on the question, being quasi judicial or quasi legislative, was final, and it was not competent to make them liable for a mistake or for negligence in the exercise of it, that is, in the location of the hospital. Where a plaintiff suffers a loss of rents from the location of a smallpox hospital in the neighborhood on land leased for the purpose, but where the hospital is not improperly conducted, he has no remedy. But if the defendants were personally negligent in the maintenance of the hospital, and in consequence of that negligence the hospital became a nuisance to the plaintiff's adjoining houses and land, the defendants were liable, provided their negligence was a misfeasance, as distinguished from a nonfeasance. If they were guilty of a nonfeasance only, no action would lie against them. It followed that the plaintiff did not make out a case against the board of health by showing that the hospital was a nuisance and that at the time it was under their control. The plaintiff must go one step further to charge the defendants with the nuisance, and prove that it was caused by acts of misfeasance on the part of the defendants, or by an act or acts done by another in the personal presence which would thus be the acts of the defendants

What Constitutes "Sunstroke."

The Supreme Court of Kansas says, in Continental Co vs. Johnson, that the latter party, by whom the action was brought, was a fluewelder, and while engaged in that occupation was overcome by heat from the forge or furnace near which he worked, and, in consequence thereof, became ill and suffered the loss of nearly a year's time. He alleged that his loss was due to sunstroke within the provision of an accident policy that loss of time due to sunstroke should be deemed to be due to external, violent, and purely accidental causes, and should entitle the insured to full benefits according to the terms of the policy. The company, on the other hand, insisted that the word "sunstroke" as used in the policy referred only to an effect produced by the heat rays of the sun

After reviewing the definitions and statements of a number of dictionaries and encyclopedias, medical dictionaries and works, the court says that it seems clear from them not merely that it is permissible to apply the word "sunstroke" to a condition produced by artificial heat, but that it accords with the best usage to do so; that such condition is comprehended within the ordinary meaning of the word wherever it is used with care and precision, whether in technical scientific treatises or in works designed for the general reader. Where the word is used carelessly or ignorantly it may well be supposed that reference is had to any temporary discomfort resulting from exposure to the direct action of the sun. So in Insurance Co. vs. Trefz, 104 U. S. 197, it was held that the statement of a witness that he had had an attack of sunstroke was not necessarily to be taken as an admission that his ailment was in fact a real case of sunstroke, properly so called. But in the drawing of an instrument of the character and importance of an insurance policy the presumption should be that language is selected to express with entire accuracy and correctness the agreements of the contracting parties. And in the present case the word "sunstroke" might be deemed to describe, or at least to be inclusive of, the condition properly called by that name, whether occasioned by solar or artificial heat, unless some special reason existed for giving it a different meaning.

There may be an apparent incongruity in calling that "sunstroke" which has no relation to any effect produced by the sun, but this is only to say that the word is not happily formed to suggest the idea it is employed to express. Etymology is not always a safe guide to the meaning of a term. It is no more imperative that "sunstroke" shall always mean a disorder caused by the sun than that "lunacy shall denote only an aberration due to the influence of the moon. The history of the word "sunstroke" seems to be that it was coined to describe any suddenly perceived ill-effects of sun heat; as observation disclosed that a definite morbid condition ordinarily accompanied or followed such an incident the word was applied to that condition in the belief that it was peculiar to cases having that origin; as advancing medical science revealed that such condition was a distinct disease and might and often did result from artificial as well as from solar heat, the physicians, instead of at once inventing a new and more appropriate name, broadened the application of the old one and their example was naturally and properly followed by others until the usage became general. Later, as a visible mark of the advanced learning on the subject, a more suitable term was originated to describe the disorder—"heat stroke," the growing employment of which may in time restore "sunstroke" to its primitive meaning.

It was argued, not without plausibility, that the language of the policy pointed to a conception of sunstroke as something of sudden and unexpected occurrence, more or less in the nature of an accident, and that this conception was only appropriate to an attack brought on by exposure to the sun's rays. But prostration resulting from heat emanating from a furnace may be as swift in its development and as startling in its effects as though it was occasioned by hot and humid weather. In each case there would be present some of the features of an accidental injury but neither would justify a recovery on an ordinary accident policy. In the only reported cases bearing on the subject (Dozier vs. Fidelity & Casualty Co. [U. S. Circuit Court], 46 Fed. Rep. 446, and Sinclair vs. Maritime Pass. Assur. Co. [English], 3 El. & El. 478), in disposing of the contention that the holder of an ordinary policy insuring him against accidental injuries is entitled to recover for disability due to sunstroke, it is held that sunstroke is not an accident but a disease. These cases are frequently referred to by the medical and legal writers and seem to be regarded as definitely settling the proposition to which they are directed. The discussion in the case first named tends to support the view that sunstroke may be caused by artificial heat, and the decision is cited as having that effect in Peterson & Haines' Text-Book of Legal Medicine and Toxicology, p. 491.

Wherefore, the court holds that the word "sunstroke," when used in an insurance policy in describing one of the risks covered, should not be interpreted as applying only to an effect produced by the heat of the sun, unless the context or other special considerations require it. The term explained denotes a condition produced by any heat. solar or artificial. Nor does the court think that the fact that in this case there was overexertion affected the liability of the company.

Current Medical Literature

Medical Record, New York.

August 25.

1 *Functional Derangement of the Ears and Upper Air Tract in the Insane. W. S. Bryant, New York.
2 *Therapeutic Value of Artificial Localized Hyperemia in the Treatment of Ambulatory or Dispensary Cases. E. Beer, New York.
3 Surgical Diagnosis in Emergency Work. W. E. Hartshorn, New Haven, Conn.
4 Pneumothorax. J. N. Hall, Denver.
5 Urethral Diverticula and Cul-de-Sacs. N. E. Aronstam, Detroit.
6 *New Management of Occipito-posterior Positions of the Fetal Head. M. C. O'Brien, New York.

1. Ears and Upper Air Tract in Sane.—Bryant shows the relation between insanity and functional derangement of the ear and upper air tract. Only three individuals out of 161 examined had perfectly normal hearing. Although the number of cases is not large enough to prove any point conclusively, they suggest that nasopharyngeal or aural diseases are far more prevalent among the insane than among normal individuals; and that sometimes hallucinations of hearing appear to be excited by subjective sensations of hearing; and that aprosectic psychosis is sometimes aggravated, i not excited by intranasal pressure. The prognosis for psychica improvement from treatment of the nasopharynx when nasa complications are a disturbing factor; and of the ear, whe active aural disease is a disturbing factor, is good. The prognosis is bad when there are chronic inactive aural conditions

2. Artificial Localized Hyperemia in Treatment of Ambulatory or Dispensary Cases.—Beer treated 90 odd cases in this way, including the following conditions and diseases: Prevention of infection, infected wounds and cellulitis of fingers or hand, abscesses, furuncles, carbuncles, acute suppurative adenitis, acute bursitis, contusions and more chronic conditions. Many of the cases in which constriction hyperemia was used were chronic.

6. Management of Occipito-Posterior Positions of Fetal Head.—O'Brien introduces either hand under the occiput, with or without anesthesia, grasps it firmly, having separated the middle and ring fingers to steady the neck, and makes counterpressure on the fundus, thus bringing the fetal body and head into one solid mass. With assistance he slowly rotates the mother to the genupectoral posture. This manipulation brings the occiput to the anterior position without traumatism to mother or child. Labor proceeds as when the patient is placed in the genupectoral position for prolapsed cord, or in the lateral obstetrical posture of the English school. O'Brien calls attention to the awkward movement which occurs when the patient's knee passes over the accoucheur, for the crux of the manipulation is to keep the head fixed steadily with the body curled on it.

New York Medical Journal.

August 25.

7 *Stereoskiagraphy. G. H. Stover, Denver, Colo.
8 Unusual Success from Iridotomy in Eyes Practically Blind from Iridocyclitis and Complicated Cataract. W. C. Posey, Philadelphia.
9 Résumé of Recent Work in Clinical Pathology of the Blood. T. W. Hastings, New York.
10 *Sternomastoid Breathing R. H. Chase, Philadelphia.
11 *Contribution to the Study of the Spanemic Heart. C. R. Jackson, New York.
12 *Strychnin as a Remedy in Pulmonary Tuberculosis. W. F. Milroy, Omaha, Neb.
13 A Model for a New Ophthalmotrope; The Gonioscope. Some Phases of Ocular Mortality. D. K. Saute, Washington, D.
14 *Improved Method of Ring Tests in Uranalysis. V. C. Pedersen, New York.

7. Stereoskiagraphy.—Stover describes stereoskiagraphy as consisting in making a pair of skiagrams of the part under examination, in such a way that by means of a special stereoscope the observer obtains from this pair of stereograms a view conveying perfect perspective. He considers the stereoskiagram to be a most useful means of Roentgen diagnosis.

10. Sternomastoid Breathing.—Chase presents a study of the dying state. Sternomastoid breathing consists of an up-and-down rocking movement of the head due to the breathing. He claims that sternomastoid breathing is a reliable sign of approaching death, and one which may serve the purpose of the physician in forming an estimate of the length of time the patient may live, without depending on signs of less value; its onset indicates that death is probably very close at hand, generally within half an hour; it is a definite symptom on which the physician may predicate his instructions or advice; it is a sign to mark the time when the *family* may be summoned to the bedside, or one which may regulate the other details of the death chamber.

11. **Spanemic Heart.**—Jackson defines the spanemic heart as one which, by reason of deficient nutrition of muscle, is dilated or dilatable. He believes it to be of three varieties: First, the heart, which is insufficiently nourished on account of general anemia. Second, the heart insufficiently nourished indirectly because of more or less persistent vasomotor failure, the blood being normal. Third, the insufficiently nourished heart from a combination of blood disease and vasomotor instability. He cites four cases in point.

12. **Strychnin in Pulmonary Tuberculosis.**—Milroy is of the opinion that strychnin should be used in pulmonary tuberculosis whenever the fresh-air treatment is not available, and that it may be used to advantage in conjunction with the *fresh-air* treatment.

14. **Improved Method of Ring Tests in Uranalysis.**—Pedersen's method is an improvement on the Boston method. The only required implement is a medicine tube about six inches long, three-eighths of an inch in diameter, tapered gradually to a rather small opening, and provided with a rubber bulb at the head, which it is well to secure at the neck of the tube with a rubber band or a tape, firmly in place to insure air-tightness. The technic is very simple, and comprises the following steps: While the air is forced and kept back from the tube by compressing the bulb the tip of the tube is immersed in the urine, which is sucked into the tube to its full capacity by allowing the bulb to expand. About half the capacity of the tube is now evacuated by again squeezing the bulb, which is maintained in a semiflat state after the drop of urine on the surface of the tube is wiped off against the neck of the urine bottle, the tip of the tube is dipped into the nitric acid. The bulb is then allowed to expand, thus sucking the acid into the tube, replacing the amount of urine evacuated by the foregoing step and thereby giving the two layers of fluid in the tube ready for the reaction—the upper, urine and the lower, acid. The tube is now stood aside in any convenient receptacle. At the juncture of the fluids the ring forms, which may be negative, doubtful, faint or positive. When the reaction is negative or positive no other step is necessary. When the ring is doubtful or faint the following detail proves the condition instantly: The tube is held over the acid bottle and the bulb slowly and uniformly compressed so that the faint ring or the supposed ring is made to descend unbroken into the taper of the tube. As the ring thus descends it does not change its thickness if the doubtful reaction is really negative, but if only faint, though really positive, the thickness of the ring at once is reduplicated and the observation of the reaction made certain.

The Boston Medical and Surgical Journal.

August 23.

15 Relations of the Gastrointestinal Tract to Nervous and Mental Diseases. R. C. Kemp, New York.
16 *Gastric Ulcer and Cancer. C. Graham, Rochester, Minn.
17 Advantages of Separate Organizations for Training Schools and Hospitals. A. Worcester, Waltham, Mass.
18 Case of Primary Erysipelas of Pharynx. H. G. Langworthy, Dubuque, Iowa.

16. **Gastric Ulcer and Cancer.**—Graham distinguishes about four stages in gastric ulcer development and would expect cancer when it did develop to appear in the third or fourth stage or often to be the fourth stage. In the first stage of ulcer there is unusually good appetite with nutrition at par or even excessive; pain occurs from two to five hours after meals, when the stomach is empty or emptying itself. The second stage may be established some months later, following several intermissions with recurrences, each increasing more or less in severity; appetite is good, though perhaps not above normal; less satisfaction follows the hearty meal; pain is severe and comes sooner after food; distress or discomfort may be present even when so-called pain is absent. In the third stage, desire for food may remain, it may be fair or decreasing, but the patient is afraid to eat because of distress, pain, gas, vomiting, sour eructations, bloating or sour, burning stomach; there is but short food relief, if any; perhaps there are obstructive symptoms; loss of flesh is usual, and even cachexia may be present. Graham says that in the undoubted fourth stage (cancerous) the whole picture intensifies, "and he who runs may read." In Graham's series of cases the males and females ran in proportion of 4 to 1 and ranged in age from 29 to 75 years, the average being a little over 50. About three-fourths of the whole number presented themselves for amelioration of symptoms that had been pressing for one year or less. Twenty-three of the number who presented long histories complained of malignant symptoms only a year or less, the average in this number being a trifle more than five months. Pain was rather constant. In 8 the histories did not state either way, one patient said no pain, the remainder (73) openly declared for pain, most of them complaining rather bitterly. Vomiting was not recorded in 11 histories, 3 patients stated no vomiting, while the great number (68) complained more or less severely. In 42 the lesion was situated at the pylorus or lesser curvature, *in 3 at the cardia.* The location was not recorded in many of the inoperable cases, but the symptoms, for which the operation was undertaken, most often spoke for pyloric end or lesser curvature location.

Of the whole number operated on 67 patients had test meals and other routine stomach examinations, chemical and physical. Tumor was present 27 times and doubtful in 3 more. Dilation was present 54 and obstruction 36 times. In 32, free hydrochloric acid was present ranging from 1 to 50 acidity; combined in 32; lactic, 42; fatty, 19; both hydrochloric and lactic acids were found 13 times. Blood was found often. There were 39 cases in which a portion of the stomach was removed and examined. In 21 cases, 54 per cent., the pathologic evidence was good that cancer had developed on an old ulcer base; in 10 cases, 25.60 per cent., the evidence was fair that the same was true, while 8 gave no evidence of preceding ulcer irritation. Then in over three-fourths of the cases, 79.5 per cent., the pathologic evidence was good or fair that ulcer was first as a cause. Twenty-one of the 39 had long histories, 14 of which have good pathologic evidence, 6 patients whose histories were long, gave evidence considered only fair, 7 patients whose histories ranged from two months to two years gave good pathologic evidence, and 4, whose histories covered from one and one-half months to two years, offered fair proof. Histories and pathologic findings ran together both positive in over half the cases, 54 per cent.

St. Louis Medical Review.

August 18.

19 Inspection of Public School Children. H. J. Scherck, St. Louis.
20 Origin and Heredity of Matter (to be continued). J. Wright, New York.

American Journal of Medical Sciences, Philadelphia.

August.

21 *Vascular Tension in Chronic Illness. H. A. Hare, Philadelphia
22 *Therapeutic Use of Tuberculin Combined with Sanitarium Treatment of Tuberculosis. E. L. Trudeau, Saranac Lake, N. Y.
23 The Opsonic Index (Wright and Douglas) in Tuberculosis. N. B. Potter, N. E. Ditman, and E. B. Bradley, New York.
24 *Technic of the Tuberculo-Opsonic Test. H. M. Kinghorn and D. C. Twitchell, Saranac Lake, N. Y.
25 A Suggestion in the Treatment of Hemoptysis. L. Brown, Saranac Lake, N. Y.
26 *A New Intestinal Parasite of Man; Parameba Hominis. C. F. Craig, U. S. Army.
27 Acetone Bodies; Their Occurrence and Significance in Diabetes and Other Conditions. T. S. Hart, New York.
28 Relations of Chronic Villous Polyarthritis to the Dumb-Bell Shaped Bacilli. M. Schueller, Berlin.
29 *Peptic Ulcer of the Esophagus. W. Tileston, Boston.
30 *Primary Sarcoma of the Adrenal Gland. I. W. Blackburn, Washington, D. C.
31 *Case of Narcolepsy, from a Specific Infection Transmitted Through Five Generations. A. N. Blodgett, Boston.
32 *An Unusual Case of Antitoxin Rash. R. L. Wilbur, Stanford University, Cal.

21. **Vascular Tension in Chronic Illness.**—Hare emphasizes the importance of studying the vascular state and the degree *of the* blood pressure in respect to the diagnosis, prognosis and treatment in several states of disease because many medical men are still impressed with the idea that a tired heart should be stimulated to greater effort when in reality it should be given as much rest as possible by diminishing its burden

He says that it is quite remarkable how competent the heart is to attend to its functions if the physician is able to overcome vascular relaxation. In his experience there are only three drugs that are useful for this purpose, atropin, adrenalin and digitalis. If the physician will direct his treatment to the vessels, the heart will often be able to care for itself. The heart should be stimulated to increased effort when the real object is to decrease its burden and to diminish the toxemia which is destroying its function. If the high tension is due chiefly to spasm, nitroglycerin will do good but it will fail to a great extent if the condition is due to fibrosis. The combined effect of rest, massage and iodids, even when fibrosis is well developed, not only will often produce excellent results in that the state of a tired heart has been proved, but also results in a marked diminution of arterial tension, partly by a cardiac and partly by a vascular influence.

22 and 24. See abstracts in The Journal, June 23, 1906, page 1964.

26. **New Intestinal Parasite of Man.**—The organism described by Craig was observed in the feces of 6 natives who were patients in the hospital at the time. In 5 of the cases, the only symptom of importance was diarrhea, the stools being of watery consistency, and containing in three instances a small amount of blood and mucus. In none of these cases was *Entamœba dysenteriæ* present. The 6 patients were suffering from a very severe attack of acute amebic dysentery, and the new ameba was found in small numbers in conjunction with immense numbers of *Entamœbæ dysenteriæ*. In 1 case *Trichomonas intestinalis* was present. Craig has only observed the organism in natives of the Philippine Islands, although he has looked very carefully for it in Americans, some of whom lived in the tropics for some time. The parasite described passes through an amebic and a flagellate stage of development. Craig suggests for it the name *Paramœba eilhardia*.

29. **Peptic Ulcer of the Esophagus.**—Tileston reports three cases, all of them terminating fatally. In the first case, that of a woman, aged 58, the ulcer was situated 3 cm. above the cardiac opening of the stomach. The ulcer did not manifest itself until it perforated. In the second case, a man, aged 59, the lower end of the esophagus for a distance of 11 cm. was denuded of mucous membrane, except for a few small islands. The ulceration was very shallow, not involving the muscularity. In the third case, a woman, aged 37, there were several ulcers in the esophagus, and also a chronic ulcer of the stomach which perforated, causing the fatal peritonitis.

30. **Primary Sarcoma of Adrenal Gland.**—Blackburn reports another case of primary sarcoma of the adrenal gland which did not produce any symptoms of Addison's disease. The existence of the tumor was not suspected until after the death of the patient. The symptoms present suggested carcinoma of the stomach though the more characteristic symptoms were absent. Both adrenal glands were sarcomatous.

31. **Narcolepsy.**—In the case reported by Blodgett the causative action of a specific infected agent is believed to have been the source of the disorder. The grandfather of the patient was supposed to have had syphilis. Each member of the next generation bore some inherited constitutional taint, but in each individual the particular form of stigma varied from that of another. The patient who forms the subject of Blodgett's communication is of the third generation, a woman, 65 years of age. She began to notice her infirmity at about 22 years when the attacks appeared in the form of an irresistible inclination to fall asleep at all times of the day without cause or apparent provocation by surrounding circumstances; otherwise she seemed to be in her usual health. She falls into a perfectly natural slumber, wakens readily, and is apparently unaware that she has fallen asleep. There is no history of acute rheumatism or endocarditis, nor of any other infective or constitutional disease. The thyroid is neither hypertrophied nor absent.

32. **Unusual Antitoxin Rash.**—The patient, whose case is reported by Wilbur, gave a history of occasional urticaria following the ingestion of strawberries or shell-fish following the administration of a prophylactic injection of 1,000 units of diphtheria antitoxin; she complained of a feeling of fullness of the head. The face was flushed; there came total hyperemia of the skin with itching and the development of immense white weals. The lips, tongue and eyelids began to swell; there was dyspnea; the pulse at first rapid, became imperceptible at the wrist, although the apex beat was vigorous. These symptoms gradually became worse, but eventually, under stimulating treatment, they subsided.

American Journal of Obstetrics, New York.

August, 1906.

33 Processes of Reproduction. F. R. Oastler, New York.
34 *Causes of Sterility. G. G. Ward, Jr., New York.
35 Sterility and its Surgical Treatment. D. Bissell, New York.
36 Functions of the Uterosacral and Round Ligaments. J. W. Bovée, Washington, D. C.
37 *Case of Meningocele of Unusual Size. G. M. Boyd, Philadelphia.
38 Adenocarcinoma of the Abdominal Wall, Developing Subsequent to the Removal of Benign Ovarian Neoplasms. E. A. Schumann, Germantown, Pa.
39 Life and Work of Dr. J. Marion-Sims. W. D. Ward, Rochester, N. Y.
40 *Symphysectomy with the Report of Five Operations and a Brief Consideration of its Advantages and its Disadvantages. L. M. Allen, Baltimore.
41 *Review of Fourteen Cesarean Sections Successfully Performed. G. M. Boyd, Philadelphia.
42 Surgical Treatment of Puerperal Infection. R. W. Stewart, Cincinnati, Ohio.
43 *Typhoid Fever Occurring During Pregnancy. C. Foulkrod, Philadelphia.
44 Significance of Uterine Hemorrhages of the Menopause. G. P. Murray, New York.

34. **Causes of Sterility.**—Ward concludes that as conception is dependent on the four essential factors of healthy spermatozoa, normal ova, the union of the same, and the proper implantation of the fertilized egg, sterility is most frequently dependent on acquired pathologic lesions, and congenital defects, which defects and lesions produce sterility by interfering with one or more of the above-mentioned essentials. A large number of cases of acquired sterility are due to pathologic lesions producing such destructive changes in the tubes and ovaries as mechanically to prevent the union of the spermatozoa with the ova. Gonorrhea is the most frequent cause of such destructive lesions. Acquired sterility in a large number of instances, is due to chronic endometritis, which produces such pathologic changes in the endometrium as to prevent the proper implantation of the impregnated ovum. The cases of sterility associated with flexions, displacements, subinvolution, fibroids and other neoplasms, are due not to these conditions per se, but to the associated chronic endometritis which prevents proper implantation. A fruitful case of an unhealthy endometrium and of tubal disease, which either singly or together tend to prevent union of the male and female elements and proper implantation, is the chronic inflammation and congestion of the uterus and adnexa incident to subinvolution or sepsis which so frequently follows abortion, especially if treated by the expectant plan. We must be impressed by the great importance of gonorrhea in its relation to sterility, when we appreciate the fact that it not only renders the woman sterile, but is responsible nearly always for sterility in the male, gonorrhea thus being an etiologic factor in about 70 per cent. of the cases. As in nearly all instances of sterility in the woman due to gonorrhea, the infection has been innocently acquired by the wife, from her husband, the fault lies with the man in more than two-thirds of all cases.

37. **Meningocele of Unusual Size.**—In the case cited by Boyd the tumor occupied the occipital region, just below the posterior fontanelle; it measured 6 inches in its long diameter, and about 5 inches in the transverse diameter. The diameter of the opening in the occipital bone measured about 1 inch. The radical cure by amputation of the sac was performed without anesthesia. An incision through the skin at the neck of the tumor was made, and the sac exposed. The intracranial fluid was then slowly withdrawn. The infant showed marked evidences of shock, became pale, and for a time ceased to breathe. These symptoms, however, soon disappeared. The hernial sac was then dissected away, and closed in with a continuous suture of catgut. The skin was sutured with the same material. The infant made a rapid recovery from the operation. It gained in weight, and seemed to be well for three months, when it began to develop acute hydrocephalus. As the head increased in size, the body lost in weight.

The infant is now six months old, is poorly nourished, and has the characteristic separation of the sutures and the large bulging fontanelles.

40. **Symphyseotomy.**—In certain cases in which Cesarean section is contraindicated or for certain reasons might not be considered safe, Allen believes that symphyseotomy might be the means of saving the life of the child. Such an example would occur in the case of a pelvis contracted at the outlet (funnel-shaped pelvis), where the head had been forced into and fixed tightly in the brim, but could not be forced through. In such a case Cesarean section would be contraindicated, as a dead child would usually be the result, whereas symphyseotomy would usually give a good result to both mother and child. Also in the case of an impacted mentoposterior variety of face presentation, where flexion of the head or podalic version was impossible, symphyseotomy might be performed. In case of limited assistants and facilities and unfavorable surroundings, symphyseotomy will undoubtedly give better results than Cesarean section. If it has been definitely decided that a living child can not be delivered *per vias naturales*, Cesarean section should be the operation of election, believing that in the long run the best results to both mother and child can be obtained from that operation.

41. **Successful Cesarean Sections.**—Boyd reports two cases and reviews 12 cases reported previously. The indications for operation were the following: Flat, rachitic pelvis, with uterine myomata; scolio-rachitic pelvis; coxalgic pelvis; general contracted pelvis; obliquely contracted pelvis; rachitic pelvis; general contracted pelvis with exostosis over promontory sacrum; labor obstructed by anterior fixation of the uterus.

43. **Typhoid Fever Complicating Pregnancy.**—Foulkrod reports four cases of pregnancy complicated by typhoid and 1 case of pregnancy occurring during convalescence from a severe attack of typhoid fever. Foulkrod asks whether there is something generative by the pregnant woman which in a certain measure protects her from the more virulent attack of the toxins of typhoid fever, and that the course of the typhoid during pregnancy is undoubtedly modifying should it occur at such a time when the serum or cells have been charged with immunizing bodies.

Annals of Surgery, Philadelphia.

August.

45 The Use of the Masland Saw for Opening the Cranial Vault. H. C. Masland, Philadelphia.
46 *Use of the Temporal Fascia to Cover in Cranial Defects. C. Beck, New York.
47 Acute Septic Infection of the Throat and Neck; Ludwig's Angina. G. G. Davis, Philadelphia.
48 *Total Laryngectomy for Carcinoma. A. H. Bogart, Brooklyn, N. Y.
49 *Treatment of Diffuse Suppurative Peritonitis, following Appendicitis. L. W. Hotchkiss, New York.
50 *Review of Fifteen Hundred Operations on the Gall Bladder and Bile Passages with Especial Reference to the Mortality. W. J. Mayo, Rochester, Minn.
51 Solitary Abscess of the Liver. C. A. Elsberg, New York.
52 *Treatment of Gastric and Duodenal Ulcers and Benign Obstructions of the Pylorus. A. Maclaren, St. Paul, Minn.
53 *Volvulus of the Small Intestine in Typhoid Fever, Simulating Perforation. J. B. Roberts, Philadelphia.
54 *Myofibroma of the Large Intestine. W. L. Estes, South Bethlehem, Pa.
55 Operative Treatment of Cancer of the Large Intestine, Causing Dangerous Intestinal Obstruction. H. W. Cushing, Boston.
56 Individual Excision and Suture in Operating for the Removal of Hemorrhoids. L. S. Pilcher, Brooklyn, N. Y.
57 Treatment of Ectopia Vesicæ. F. Trendelenburg, Leipzig, Germany.
58 *Congenital Protrusion of Heart, Stomach and Spleen. C. H. Wintsch, Newark, N. J.
59 Chewing-Gum Nucleus of Vesical Calculus. E. B. Kenner, Galveston, Texas.
60 Dislocation of the Metatarsal Bones. L. W. Ely, New York.

46. **Temporal Fascia to Cover Cranial Defects.**—Beck refers to another possible method of covering over defects of the cranium which meets indications not met by other methods in use. He makes use of the strong fibrous sheaf of the temporal fascia inasmuch as this shows no marked tendency toward the formation of adhesions. In the case reported, the defect in the skull was about 3 inches long and 1 inch wide at its greatest diameter. There was a total absence of bone substance. This was 9 months after the original injury. Operation was undertaken mainly for the relief of pressure symptoms caused by extensive scar formation. An incision was carried around the temporal muscle down to the bone. Then this flap and its periosteum was loosened, care being taken not to tear the connecting link of periosteum which was kept as close to the bone suture as possible. Beck then folded over the entire flap at the lower edge of the defect and covered the gap with it. At the opposite end he chiseled off enough bone to enable him to make use of a small amount of dura to which he attached the aponeurotic end with thin catgut sutures. This aponeurosis was in direct contact with the brain, while the periosteum was on top. The skin surfaces were united. Up to the present time, six months after the operation, everything has gone well.

48. **Total Laryngectomy for Cancer.**—Bogart reports the case of a man, aged 46, who had an extensive carcinoma of the right vocal cord. The larynx was totally removed, four months ago, adopting the method advocated by Keen. The patient made a complete operative recovery.

49. **Treatment of Suppurative Peritonitis Following Appendicitis.**—That the peritoneal drain can be eliminated as a factor of importance in the treatment of diffuse suppurative peritonitis Hotchkiss believes has been shown by the outcome in 28 patients operated on since 1903. The McBurney muscle splint with or without the Weir extension to the posterior sheet of the rectus has generally been found sufficient for the necessary manipulations. As little ether as possible was administered, and every effort was made to complete all peritoneal work with as much speed and as little traumatism as possible. The appendix was systematically searched for and removed with as little disturbance to the intestines as need be. After its removal and the cleansing of the appendiceal site, the pelvis and lower abdomen were rapidly washed out with the Blake tube or the jacketted glass return-flow canula. In many cases the peritoneum was closed without attempting to remove the saline solution which had not run out. Drainage of the external wound down to the peritoneum was generally employed, from the fact that the wound was usually infected and needed it. Gastric lavage was given before the patient left the table, and, as a rule, an ounce or two of saturated solution of Epsom salts was introduced through the tube and left in the stomach. Morphin, as far as possible, was not given and the rectal tube with saline irrigation of the lower bowel was used generally at intervals of from six to eight hours for the first two days. If vomiting occurred the stomach was washed. The use of saline irrigations to the peritoneum through the small lateral incision, does not consume much time, and seems by diluting the remaining fluids to hasten their absorption, besides acting generally as any intravenous infusion would to hasten the removal of toxins by dilution besides stimulating the heart and circulation. Moreover, the actual ability of the peritoneum to cope with the inflammation seems to be increased and not hindered. In those cases in which the inflamed appendix is the cause of the peritonitis, the problem resolves itself into the rapid removal of the offending organ without evisceration, in all cases. The peritoneum has proven itself abundantly able to take care of the resulting inflammation, and drainage in the absence of local necrosis is often ill-advised and not based on sound physiology or mechanics. Gauze packing is not only unnecessary but frequently harmful, being probably responsible for increased mortality, not to speak of the incident damage to the endothelium, with the resulting adhesions.

50 and 52. See abstracts in The Journal, July 14, 1906, pages 146 and 147.

53. **Volvulus of Typhoid Intestine Simulating Perforation.**—In the case reported by Roberts the general symptoms of perforation were not present, but the pain, tenderness and rigidity seem to indicate some intra-abdominal lesion. On opening the abdomen neither serum nor pus were found. There was great difficulty in drawing up the cecal portion of the ileum, which seemed to be imprisoned in the pelvis and was collapsed. The ileum above this portion was moderately distended and freely movable. The appendix was short and bound firmly to the cecum by a web-like attachment. It was not swollen or

inflamed, and no concretion could be felt within it. Examination of about 2 feet of the ileum did not reveal any perforation or discoloration of the serosa to indicate the presence of internal ulceration. The pain and rigidity of the abdomen disappeared after the operation and the patient went through the remainder of the typhoid without abdominal symptoms other than such occasional pain that might be seen in ordinary cases. Consideration of this case seems to show that there was either a volvulus causing constriction of the lower portion of the ileum, or a mild appendicitis due probably to a typhoid inflammation of the mucous membrane. Because of the critical condition of the patient from typhoid fever, the absence of definite symptoms of appendicitis and the possibility of the condition of the appendix being congenital, the appendix was not removed. Roberts concludes that the symptoms were due to a sudden twist of the ileum, which was finally disentangled, when he turned the coils over and over in his endeavor to bring the cecal end of the small intestine up from the pelvis, in which it was imprisoned.

54. See abstract in THE JOURNAL, June 30, 1906, page 2016.

58. **Congenital Protrusion of Heart, Stomach and Spleen.**—Wintsch reports the case of full-term living celosomus. He has not found a similar case reported. There was complete protrusion of the heart, stomach and spleen. Labor seemed perfectly normal. The child weighed 7 pounds. It defecated and urinated normally. It became very cyanotic at times and the cyanosis was aggravated when pressing on the heart with the hand. The baby lived 2 days and 3 hours. It was fed by mouth with water and milk from the breast of the mother, which it retained. Just before death the child vomited a greenish fluid and bled from the mouth.

Southern California Practitioner, Los Angeles.

August.

61 The Early Diagnosis and the Prognosis of Pulmonary Tuberculosis. S. A. Knopf, New York.
62 Stricture of the Urethra. G. Macgowan, Los Angeles.
63 Albuminuria in Pregnancy. F. W. Thomas, Claremont.
64 Climate of Hawaii. E. S. Goodhue, Holualoa, Hawaii.
65 Obesity. P. H. Sunde, Los Angeles.
66 Mastoiditis—Some Practical Points. H. Hastings, Los Angeles.
67 Massage—A Change Needed in Our Attitude Toward Its Practice. J. T. Rankin, Los Angeles.

Iowa Medical Journal, Des Moines.

August 15.

68 Report of Chairman of Section of State Medicine. C. T. Lesan, Mt. Ayr.
69 Sanitary and Hygienic Inspection of Schools. L. A. Thomas, Red Oak.
70 How Shall the Laity be Educated on Venereal Diseases? G. N. Ryan, Des Moines.
71 Pure Milk. G. H. Sumner, Waterloo.
72 Value of the Glandular Extracts. M. M. Jones, Ames.
73 Treatment of Acute Middle-Ear Suppuration. P. R. Wood, Marshalltown.
74 Medical and Surgical Progress. G. Cullen, Des Moines.
75 Case of Tetanus. W. R. Brock, Sheldon.

Journal of the Arkansas Medical Society, Little Rock.

August 15.

76 Degeneracy and Social Disease. T. J. Garner, Washington, Ark.
77 Some Severe Complications of Influenza. B. G. Wood, Cominto.
78 The Race Question from a Medical Standpoint. H. T. Scott.
79 Tuberculosis G. E. Penn, Hot Springs.
80 Medical Legislation. O. L. Williamson, Marianna.
81 Modern Views of Neurasthenia and Its Treatment. J. Punton, Kansas City, Mo.
82 When to Begin to Treat Syphilis. J. C. Minor, Hot Springs.

Colorado Medicine, Denver.

August.

83 The X-Ray as a Means of Thoracic Diagnosis. D. P. Mayhew, Colorado Springs.
84 Use of the X-Ray in the Diagnosis of Pulmonary Diseases. S. E. Solly, Colorado Springs.
85 Four Cases of Spotted Fever Occurring in Colorado. J. M. Braden, Carbondale.
86 Fresh Air and Rest in the Treatment of Tuberculosis. G. R. Pogue, Greeley.
87 Pelvic Girdle vs. Abdominal Bandage. C. D. Spivak, Denver.

Denver Medical Times.

August.

88 Treatment of Constipation. G. Law, Greeley.
89 Treatment of Chronic Constipation. M. J. Krohn, Denver.
90 Id. J D. Crisp. Denver.
91. Id. F. G. Byles, Denver.
92 Id. F. E. Prewitt, Denver.
93 Id. W. C. K. Berlin, Denver.
94 Acute Tonsillitis. D. S. Neuman, Denver.

Utah Medical Journal.

August.

95 Active Principle Therapy. or the Need of a Revival of Therapeutics . R. J. Smith, Smithfield, Utah.
96 Should the Physician be Interested in Politics? J. E. Scallon, Salt Lake City.

New York State Journal of Medicine.

August.

97 Conditions within the Appendix Causative of its Inflammation. A. E. Isaacs, New York.
98 Value of Education and Treatment as Safeguards in Venereal Infection Through Marriage. J. A. Fordyce, New York.
99 Should Not Safeguards from Venereal Disease be Thrown Around Marriage? J. A. Wyeth, New York.
100 Legal Measures to Prevent Venereal Diseases. A. N. Taylor, New York.
101 Rôle of Pure Cow's Milk in Infant Feeding. A Jacobi, New York.
102 Echinococcus Cyst of the Liver. R. S. Fowler, Brooklyn, N. Y.
103 History of the Medical Society of the State of New York (continued). J. J. Walsh, New York.

Cleveland Medical Journal.

August.

104 Native Doctors of Burmah. J. B. Stewart, Cleveland.
105 Vesical Hyperesthesia. C. G. Foote, Cleveland.
106 Examination of 538 School Children of the East Cleveland Schools. L. K. Baker, Cleveland.
107 History and Value of Massage and Exercise. B. Anderson.

Western Medical Review, Lincoln, Neb.

August.

108 Strychnin as a Remedy in Pulmonary Tuberculosis. W. F. Milroy, Omaha.
109 Lymphatic Glands of the Neck. A. C. Stokes, Omaha.
110 Treatment of Epilepsy. F. E. Osborne, Beatrice.
111 Is Internal Medicine a Failure? W. H. Wilson, Table Rock.

Bulletin of the Johns Hopkins Hospital, Baltimore.

August.

112 Address at the Formal Opening of the Laboratories of th Rockefeller Institute for Medical Research on May 11, 190 W. H. Welch, Baltimore.
113 Teaching of Pathologic Physiology. W. G. McCallum, Baltimore
114 Phlegmonous Enteritis. W. G. MacCallum, Baltimore.
115 Multiple Cavernous Hemangiomata of the Intestine. W. G. MacCallum, Baltimore.
116 Mechanical Effects of Experimental Mitral Stenosis and Insufficiency. W. G. MacCallum and R. D. McClure, Baltimore.
117 Acute Hemorrhagic Pancreatitis Following Obstruction of the Bile Papilla. C. H. Bunting, Baltimore.
118 So-called Spontaneous Focal Myocarditis and the Occurrence of Calcification of the Degenerate Muscle Fibers. E. K. Cullen, Baltimore.
119 Disseminated Tuberculosis in Relation to the Thoracic Duct and Vascular Tubercles. G. H. Whipple, Baltimore.
120 Necrosis of Epithelium in the Kidney in Infections and Intoxications. J. H. Hewitt, Baltimore.
121 The Growth of Lymphatics in Granulation Tissue. T. H. Coflin, Baltimore.
122 Growth of Carcinoma Cells Within the Muscle Fibers in Carcinomatous Metastases to Voluntary Muscle. G. H. White, Philadelphia.
123 Typhoid Nodular Colitis. G. H. Whipple, Baltimore.

Medical Sentinel, Portland, Ore.

August.

124 Value of Roentgen Rays in Therapeutics. L. H. Hamilton, Portland .
125 Drainage. J. D. Sternberg, Portland.
126 *Rocky Mountain or Spotted Fever. H. N. Mayo, Salt Lake City, Utah.
127 Necessity of State and National Control of Tuberculosis. J. P. Tamiesie, Hillsboro, Ore.

126. This article appeared in THE JOURNAL, July 7, 1906, page 36.

The Therapeutic Gazette, Detroit, Mich.

August 15.

128 Overtreatment of Syphilis. G. H. Fox, New York.
129 Treatment of Syphilis. M. H. Hartzell, Philadelphia.
130 Id. W. A. Hardaway, St. Louis, Mo.
131 Id. E. Martin, Philadelphia.
132 Id. G. MacGowan, Los Angeles.
133 Diarrhea in Infancy and Early Life. I. H. Hance, Lakewood, N. J.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

August 11.

1 Relations of Medical Men to Their Patients. R. Maclaren.
2 *Present Position of Prostatic Surgery. J. H. Nicoll.
3 *Series of Cases in which Collections of Stones Formed in the Prostatic Urethra. C. A. Morton.
4 *The Vesical Sphincter and the Mechanism of the Closure of the Bladder. C. Leedham-Green.
5 The Modern Mastoid Operation. A. Bronner.
6 Microscopic Changes in the Nervous System in a Case of Chronic Dourine. F. W. Mott.
7 Case of Obscure Intracranial Tumor; Meningeal Sarcoma with Extension to Fourth Ventricle. G. H. G. Davie.

2. Position of Prostatic Surgery.—Extended experience has confirmed Nicoll's opinion that the first step in prostatectomy should be the opening of the bladder by the suprapubic route. This permits the completion of the diagnosis and the complete bi-manual examination of the prostate, and also a decision whether the urethra and mucous floor of the bladder are to be preserved intact or not. By whichever method of operating, vesicle or submucous, the surgeon, once the prostatic capsule has been opened, requires no other instrument than his finger, provided he is prepared to bring away, in whole or in part, the mucous urethra. Nicoll claims that in operating by the submucous method it is possible in 70 per cent. of the cases to enucleate the prostate by the finger alone without damage to the urethra or vesicle wall. He has never seen fatal hemorrhage following prostatectomy by any method. He claims that prostatectomy by enucleation constitutes the cure for senile hypertrophy of the organ and its effects. The cases in which he has performed enucleation are according to three series: The first series comprise 48 cases, with 4 deaths, a little over 8 per cent. The second series comprise 25 cases, with 5 deaths, or 20 per cent. Two of the 5 deaths occurred in cases in which Nicoll had previously, on account of the patient's feeble and unsound condition, discouraged the idea of operation. The third series showed 38 cases, with 2 deaths, or about 5.5 per cent.

3. Calculi in Prostatic Urethra.—Morton reports three cases in all of which the presence of the stone was associated with a stricture of the urethra. In none of the cases, however, was the stricture in front of the prostatectomy urethra. In one case it was scrotal, in another at the junction of scrotum and penis, and in the third near the meatus. Neither were the strictures very tight. In the first case 7 stones were removed, the largest weighing 208 grains. Only 1 stone was found in the second case, and a number of fragments, weighing 95 grains, in the third case.

4. Mechanism of Vesical Sphincter.—Green injected the bladder of certain men and youths with a suspension of bismuth, and then radiographed the pelvis. In every case he found that whether the bladder was fully distended or not, the outline of the organ was oval and not pear-shaped, and the urethra was sharply cut off from the bladder without a suggestion of a bladder neck. He concludes, as a result of his experiment, that there are reasons for believing that the sphincter of the bladder (the internal prostatic sphincter) plays a far more important part than Finger and Guyon credit it with, and that under ordinary circumstances it is by this muscle that the bladder is closed whether distended or not. There is evidence, he thinks, that when the internal sphincter does yield, it does so, not because it is overcome by the mechanical pressure of the urine in the bladder, but because its muscular fibers relax as a vital act in response to a nerve impulse preliminary to the evacuation of the urine. The normal act of micturition would appear to be as follows: As the bladder becomes distended with urine the vesical nerves are stimulated and evoke stronger and stronger contractions of the detrusor muscles, giving rise to the desire for micturition. To withstand the increased pressure of the urine the tone of the internal unstriped muscular sphincter is increased, and, if necessary, even the accessory voluntary urethral muscles are called into play. When a favorable opportunity for micturition occurs the internal sphincter is voluntarily relaxed, together with the rest of the unstriped muscular tissue of the posterior urethra, and the urine is expelled by the contraction of the detrusors.

The Lancet, London.

August 11.

8 The Hands of Surgeons and Assistants in Operations. A. E. J. Barker.
9 Internal Secretion and the Ductless Glands. S. Vincent.
10 Cure of Chronic Suppuration of the Middle Ear without Removal of the Drum or Ossicles or the Loss of Hearing. C. J. Heath.
11 A Form of Amblyopia in Young Children Consequent on Inherited Syphilis. S. Stephenson.
12 Auriculoventricular Bundle of the Human Heart. A. Keith and M. W. Flack.
13 *Successful Case of Splenectomy for Rupture of the Spleen. G. S. Simpson.
14 *Unusual Forms of Anemia in Childhood. T. R. C. Whipham and A. N. Leathem.
15 *Plastic Surgery of the Renal Pelvis. J. W. T. Walker.

13. Rupture of Spleen.—In addition to reporting one case of rupture of the spleen, Simpson discusses 70 cases recorded in the literature since 1891. He advises immediate operation in all cases as soon as the diagnosis is made, even though there may not be much hope of saving the patient's life. In the 70 cases referred to, 42 patients were operated on; of these, 27 lived and 15 died, a mortality of 36 per cent. All those not operated on died. The causes of failure after operation were peritonitis, rupture of other viscera, especially the left kidney; injuries of the left pleura, other injuries, such as fracture of the base of the skull, and operation performed too late. The majority of patients show no abnormal effect except a transient anemia and leucocytosis, which swings back to normal in about a month, and an enlargement of the lymph glands, most often the left axillary and inguinal.

14. Unusual Forms of Anemia in Childhood.—Whipham and Leathem report three cases. The first 2 support their views as to the existence of that acute lymphemia without marked leucocytosis. The third case is an anomalous one and no diagnosis was made. The patient presented many points suggestive of pernicious anemia, but it was impossible to confirm this diagnosis.

15. Plastic Surgery of Renal Pelvis.—Walker reports the case of a young woman who had a movable tumor on the left side of the abdomen. It had existed about 7 months and followed the sudden attack of pain in that region, the result of carrying a heavy box downstairs. Four similar attacks of pain occurred later, some the result of exertion, others not. There were no urinary symptoms. The mass seemed to swing around a pedicle fixed above the umbilicus. Examination proved absolutely negative as to determining the nature of the tumor. A diagnosis of movable kidney without hydronephrosis was made. On cutting down on the kidney it was found to be attached to a large bladder-like cyst which was recognized as an enormously distended pelvis. The ureter below the mass showed no signs of dilatation. Walker excised a large triangular portion of the kidney pelvis in order to reduce its capacity and fix the kidney by a combination of decortication with non-decortication. The operation employed is described in full.

The Practitioner, London.

August.

16 Postpartum Hemorrhage. E. S. Bishop.
17 *Seven Cases of Hernia Treated by the Implantation of a Prepared Filigree of Silver Wire. L. McGavin.
18 *Intestinal Obstruction in Children. A. Edmunds.
19 Chorea Gravidarum. H. French and H. T. Hicks.
20 *Surgical Aspects of Colitis. P. L. Mummery.
21 *Syncytioma Malignum. J. T. Hewetson.
22 Two Cases of Branchial Fistula. W. Downie.

17. Silver Filigree in Hernia.—McGavin has employed the method described by Bartlett in 7 cases. One of these was a postoperative ventral hernia, 1 a case of extensive separation of the recti muscles and enteroptosis, 1 an umbilical hernia, and 4 were inguinal hernia. The outcome in all the cases was a successful one. McGavin calls attention to certain points which he believes are essential, such as the size of the filigree and its situation; the most suitable spacing of the loops, the removal of a filigree, and the filigree as a time saver.

18. Intestinal Obstruction in Children.—Edmunds reports a case of intestinal obstruction in a female child, aged 3 years and 4 months. The abdomen was opened through the right rectus muscle. On turning up the omentum a tag was found adherent to the tip of a short lateral protest of the small intestine. On one side of this the bowel was slightly distended and an obstruction could be demonstrated at the base of the process. The projecting portion of bowel was excised and showed that there was an acute kink of the intestine combined with great narrowing of the wound, forming a valve which presented a formidable obstacle to the passage of intestinal contents. The cut ends of the bowel were sutured together and the patient made a complete recovery.

20. Surgical Aspects of Colitis.—Mummery concludes that colitis should be looked on as a symptom rather than as a disease. A careful examination should be made. if possible, with the sigmoidoscope, and the cause of the colitis should be carefully determined before any treatment is adopted. If the colitis is due to disease in some neighboring organ, such as the appendix, kidney, or gall bladder, this condition should be treated by operation. If the colitis is secondary to malignant disease in the bowel, operation at the earliest possible moment affords the only chance of cure, and an early diagnosis is here of the utmost importance. If it is due to some local lesion, such as tuberculosis or actinomycosis, it must be treated locally; if necessary, by operative means, such as colotomy or enteroanastomosis. True mucous colitis is best treated by von Noorden's method of dietary, combined, if necessary, with irrigation of the colon. In some very obstinate cases, and especially in cases of ulcerative colitis, a temporary cecotomy, or colotomy, or enteroanastomosis seems to be the only method of cure, but should not be adopted until a careful trial has been made of palliative treatment.

21. **Syncytioma Malignum.**—As the result of an instructive case which occurred in his practice, Hewetson concludes as follows: 1. Metrorrhagia, following abortion or labor, should call for more prompt investigation, especially in women under thirty. 2. Dilatation and curetting, in such circumstances, is an operation of considerable responsibility, in view of the possibility of malignant disease. 3. Sharp curettes are contraindicated in the parturient uterus, and when septic infections exist. 4. All such curettings should be submitted to an expert pathologist for microscopic examination. 5. Continued metrorrhagia, after such treatment, should be regarded as of serious import, and should call for fresh investigation and prompt radical measures.

Journal of Tropical Medicine, London.

August 1.

23 Studies in Plague. C. Terni.
24 Anatomy of the Biting Flies of the Genera Stomoxys and Glossina. G. M. Giles.

Glasgow Medical Journal.

August.

25 Certain Clinical Aspects of Arterial Disease. J. L. Steven.
26 Influence of the Acute Infections on the Arteries. J. M. Cowan.
27 Physiologic and Therapeutic Actions of High-Frequency Currents, with Illustrative Cases. J. R. Riddell.
28 Choroido-Retinitis of Obscure Etiology. E. Thomson.
29 Case of Otitic Extradural Abscess, Associated with Paralysis of Sixth Cranial Nerve and Double Optic Neuritis. J. S Barr.

Bulletin de l'Académie de Médecine, Paris.

30 (Year LXX, No. 27.) Hypertrophie compensatrice du péroné dans une luxation ancienne du tibia. Couteaud and Chauvel.
31 Luxation récidivante de l'épaule. Arthrotomie. Guerison. Id.
32 *Sur la typhlite muco-membraneuse ou sableuse et l'appendicite.
33 (No. 28.) Organisation du service de la vaccination en Algérie. Kelsch.
34 *Traitement des opacités cornéennes par les agents physiques par M. le Dr. E. Sulzer. Chauvel.
35 Le paludisme à Madagascar. R. Blanchard.
36 (No. 30.) *Tumeurs cancéreuses et helminthes. E. Roux and A. Borrel.
37 L'assistance médicale en Indo-Chine. Kermorgant.
38 *Moustiquaire électrique. Chaulin and Blanchard.
39 Emigration et santé publique (public health). Chantemesse and Borrel.

32. **Discussion on Appendicitis.**—The rather sensational discussion of appendicitis and muco-membranous typhlitis which had continued through several meetings of the Académie was closed July 3. Among the latest speakers Blanchard announced his conviction that intestinal worms are frequently responsible for these morbid conditions. They induce minute lesions in the mucosa of the intestine, and especially in the appendix, and bacteria soon ensconce themselves in the nests thus provided for them. In case signs of the presence of helminths are discovered, treatment should aim to expel them, both as a preventive of appendicitis and as a cure of existing intestinal trouble above or below. He related a number of instances in which symptoms indicated appendicitis, but after evacuation of a number of worms all symptoms subsided. He considers it the physician's duty to examine the stools for traces of worms, and if eggs of the trichocephalus, ascaris or oxyuris are discovered he advises giving three 1 gm. doses of thymol at one hour intervals on three successive days. These doses are as effectual as larger ones, and are useful for the ascaris and the oxyuris, as well as the trichocephalus. It is of the utmost importance that the patient should refrain from ingestion of alcohol, oil or other substances capable of dissolving the thymol and freeing its toxic properties. Vegetables fertilized with human excreta are liable to prove a prolific source for infecting man with helminths, and Blanchard urged the absolute prohibition of manuring with human excrements.

34. **Treatment of Opacity of the Cornea by Physical Agents.**—Sulzer is connected with the de Rothschild Ophthalmic Foundation and has been much pleased with the results of treatment of opacity of the cornea with electrolysis, with or without phototherapy, or the latter alone and radiotherapy. His experience includes 34 cases. Benefit was derived in all but 6, vision increasing considerably. The cases of interstitial sclerosis were improved as well as the more superficial cicatrices Applied directly on a superficial cicatrix the negative electrod with a current of from 4 to 7 milliamperes, leads to the forma tion of gaseous bullæ which lift up the opaque patch from th underlying tissues. The consequence is the formation of a mor translucent cicatrix, less white, less opaque, although th sclerosis may still persist. A much more intense reaction fo lows exposure of the eye to a bright light, rich in actinic ray the application lasting from 20 to 90 seconds, repeated in eigh or ten days. The results, Sulzer states, were particularl good in pronounced sclerosis, reducing the intraocular tensio and favoring the absorption of effusion in the papilla. Th only contraindication is a tendency to glaucoma. He has thu treated 24 patients, all but 4 under 20, with a single exposur for 6 eyes, 2 for 11, 3 for 17, and 4 or 5 for 2. In 14 cases th reaction to the light was very striking.

36. **Cancerous Tumors and Helminths.**—Borrel states tha among the rats and mice kept at the Paris Institut Pasteu those inhabiting certain cages presented a very much large proportion of spontaneous cancers than other animals, showin that there may be "cancer cages" as well as "cancer houses." The locality of the cancer also seemed to be decided by th special cage in which the animals were kept. One of thes cages has already furnished more than 30 cases of spontaneou cancer. In the lungs of animals which had succumbed to thes cancers, secondary tumors were found in the lungs wit helminths in the adjoining lung tissue. One rat, succumbin to an epithelial cancerous tumor in the right kidney, wa found to have cysts in the other kidney and the liver containin embryos of the *Tenia crassicola* of the cat. In another rat a large sarcoma of the liver was found surrounded by cysts exhibiting the same parasite. The sarcoma from this rat has been inoculated through three passages, suggesting that the cysticercus carries with it some virus yet unknown. This virus inoculated with the cells, in its passage from rat to rat, is capable, without any further intervention on the part of the helminth of propagating indefinitely the elements of the tumor. It is interesting further to note that in the two cases the cancer was of a different variety.

38. **Electric Mosquito Trap.**—Chaulin's apparatus is a sort of cylindrical lantern made of two large horizontal rings connected by vertical, parallel chains, rather close together, with a light inside. The electric current passes through the chains. Insects, especially mosquitoes, attracted by the light, can not pass between the chains without touching them in more than one place, thus closing the circuit and killing the insects by the charge of electricity that passes through them. Very little electricity is needed, a small storage battery taken temporarily from an automobile is ample for the purpose.

Presse Médicale, Paris.

40 (XIV, No. 56.) Organisation médicale et pathologie du Siam. E. Jeanselme.
41 Extraction des corps étrangers des bronches par la bronchoscopie (foreign bodies). Guisez.
42 L'indican et le scatol urinaires. G. Daremberg and T. Perroy.
43 (No. 57.) Certificats d'études médicales supérieures. F. de Lapersonne. See editorial, page 587.
44 *L'aphasie motrice. Sa localisation et sa physiologie pathologique. J. Dejerine.
45 (No. 59.) Purpura hémorragique et tuberculose. R. Bensaude and L. Rivet.
46 (No. 60.) Traitement des otites chroniques par la vaporisation tubo-tymphanique aux eaux sulfurées-sodiques thermales.. E. Escat.
47 (No. 61.) Les 3 instituts Pasteur de l'Indo-Chine. C. Nicolle.
48 De la senilité (the senile brain). A. Létienne.
49 *Composition de la glace et congélation de l'eau (of water). P. Sacerdote.

44. **Marie's New Views of Motor Aphasia.**—Marie's views were reviewed in an editorial in The Journal, Aug. 11, 1906, page 436. Dejerine energetically combats them and presents arguments to show the fallacy which has misled Marie. Dejerine's experience with hundreds of cases during the last 25 years makes him take an opposite view, which he here presents in detail.

49. **Composition of Ice.**—Sacerdote has found that as water freezes slowly all the impurities are pushed away from the part first freezing. The center of a cake of artificial ice is generally opaque, while the part first frozen—the outside—is generally clear. Whatever the character of the water used, the water obtained by melting the outer, clear parts, is almost perfectly pure, while that from the central, opaque part contains the impurities. The bacteria do not escape this law, he adds, but will be found congregated in the central part of the cake.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

50 (XXXII, No. 28.) Ueber die Behandlung der Nieren-Tuberculose (of kidneys). O. Zuckerkandl. Clinical lecture.
51. *Weitere Erfahrungen mit der Rückenmarks-Narkose (spinal anesthesia). R. Freund.
52 Automobile Fracture.—Ueber eine typische Verletzung der Chauffeure. R. Muhsam. See The Journal, xlii, p. 1054.
53 Mechanism of Fracture of Metatarsal Bone.—Welches ist der gefährliche Moment für die Entstehung eines Mittelfussknochenbruches beim Gehen. A. Kirchner.
54 Ueber Befunde von Spirochæte pallida in den Nerven des Präputiums bei syphilitischer Initialsklerose. S. Ehrmann
55 Bemerkungen zu dem Aufsatz von A. Kowarski in No. 25. Eine vereinfachte Methode zur quantitativen Bestimmung der Harn-Säure im Harn (test for uric acid). J. Ruhemann.
56 Ueber den Wert plastisch wirkender Röntgenbilder. M. Cohn.

51. **Spinal Anesthesia.**—Freund reports experiences with 209 cases in which operations were performed under spinal anesthesia at Veit's clinic. This method of anesthesia has been proved to possess so many advantages and so few drawbacks that he thinks it has already won an assured position and possibly may take first rank among all methods of anesthesia, even for major operations. He used rather more of the anesthetic than others advise, and was particular to refrain from testing the patient's sensibility, believing that complete quiet is the best preliminary to an operation. If the analgesia is defective this is never due to the lack of receptivity on the part of the patient, he says, but to mechanical and anatomic conditions. The preferred point for the injection is as high as possible, at least between the second and third lumbar vertebræ, and exactly in the median line. The pelvis was always elevated immediately after the injection to an angle of 20 or 25 degrees from the horizontal, and kept in this position during the 20 minutes required for the local disinfection. When the laparotomy is commenced the pelvis is raised still higher. The anesthesia does not extend unnecessarily high with this technic. The extent of the anesthetized area can be further controlled by allowing more or less of the cerebrospinal fluid to escape. Four c.c. is the rule, and this is generally enough for gynecologic operations. There were 104 laparotomies and the spinal anesthesia was successful in 93; 30 Alexander-Adams operations, with success in 26; 16 vaginal operations, with successful anesthesia in 10; 48 vaginal operations, with anesthesia in 43—a total of successful spinal anesthesias in 181, that is, in 86.6 per cent. of 209 major gynecologic operations on women between the ages of 18 and 73. The remaining 13.4 per cent. required a little chloroform before the operation could be completed. One patient, an asthmatic woman of 73, with myoma of the uterus, 8 minutes after the injection, while the parts were being disinfected, the pelvis raised a little, rapidly died after vomiting and sudden arrest of the respiration. This fatality occurred in the early experience at the clinic, before the present technic was adopted, which ensures that the cannula does not enter too far. The guide is left in the cannula only until the skin and the first layer of the soft parts are passed. Then the guide is withdrawn and the cannula is cautiously pushed in until the cerebrospinal fluid flows out freely, and no farther. This ensures that the tip of the cannula does not go beyond the arachnoid space where are the sensory roots. These precautions had not been dreamed of at the time of the fatality reported, and it is highly probable that the cannula had been inserted too far, bringing the anesthetic to the motor roots, and paralyzing the higher vital centers when the pelvis was elevated. The few slight by-effects noted are growing constantly less with improved technic. Vomiting was observed in about a fourth of all the cases, but it is less and more transient than that liable to follow chloroform. More disagreeable is the brief paralysis of the anal sphincter with sudden passage of stools occasionally occurring after a vaginal operation. This he learned to obviate by the preliminary insertion of an opium suppository. He concludes with the statement that spinal anesthesia in its present form is eminently practicable.

Hospitalstidende, Copenhagen.

Last indexed page 727.

57 (XLIX, No. 21.) Et Tilfælde af diffust kavernøst Angiom paa venstre Under-Extremitet, i venstre Regio glutæa, perinælis og pudendalis. H. Heide.
58 (Nos. 22-25.) Studier over den saakaldte typiske Radius-Fraktur. K. Poulsen. (Continued.)
59 *Undersøgelser over primær Tuberkulose i Fordøjelseskanalen (in digestive tract). J. Ipsen.
60 *Bemærkninger om Forfrysning af det subkutane Fedtvaev. P. Koefoed.

59. **Primary Tuberculosis of Digestive Tract.**—This communication from the Copenhagen Institute of Pathologic Anatomy continues Fibiger's research on primary tuberculosis in the digestive tract. He found tuberculous lesions in 116 out of 213 cadavers, and in 13 they were primary in the digestive tract or connected glands. Among the 79 children, 25 were tuberculous, and in 4 of these the lesions were primary in the digestive tract. Ipsen has continued this research, the total material now comprising 600 autopsies. Tuberculous lesions were found in 311, and they were evidently primary in the digestive tract in 5.17 per cent. of the total cadavers, and in 10 per cent. of the tuberculous, that is, in 31 cadavers. Out of the 187 children's cadavers, 58 proved to be tuberculous, and the lesions were primary in the digestive tract in 10, that is, in 17 per cent. These figures are manifestly too low, as they do not include those in which the tubercle bacilli passed through the intestinal walls without leaving any traces. The circumstances indicated infection from cow's milk in some of the cases, and from association with consumptives in others.

60. **Freezing of Subcutaneous Adipose Tissue.**—Koefoed describes a case in which the excessive use of an ice bag for threatened appendicitis froze the subcutaneous fat. The patient was an extremely nervous young woman, and when first seen in consultation she was somewhat feverish and agitated. She complained of pains in the ileocecal region, where there were indications of the erythem that follows freezing. The deep subcutaneous fat was infiltrated and hard as from a typical phlegmon. An incision failed to reveal any pus, but the subcutaneous tissue was hard and grayish in color, and it did not bleed. The skin bled normally during the incision. Only the lowest vascularized stratum presented a normal aspect. In the course of 2 weeks everything had returned to normal, without any suppuration or sloughing. Koefoed had a similar experience with another patient, whose family physician had likewise applied the traditional ice bag. The changes in the subcutaneous tissue persisted for 2 and 3 weeks in these cases after the fat had been so thoroughly frozen. This possibly occurs oftener than is generally supposed, and may be the unrecognized cause of certain complications.

Hygiea, Stockholm.

Last indexed XLVI, page 511.

61 (LXVIII, No. 9.) *Om difteridöden (death in diphtheria). T. Fischer.
62 *When to Operate in Case of Uterine Myoma.—När bör ett uterusmyom opereras? E. Essen-Möller.
63 (No. 10.) *Om peritoneal-dränage. F. Westermark.
64 383 bråckoperationer (herniotomies). O. Lundblad.
65 *Gastrointestinala rubbningar beroende på arterioskleros. E. E. Rodhe.
66 (No. 11.) *Operationer för nefrit. G. Ekehorn.
67 Ett anmärkningsvärdt fall af otogen pyemi. G. Nilson.
68 Letal gallgångsblödning framkallad af sten (fatal gallstone hemorrhagic affection). H. Allard.
69 Traumatisk Jacksons epilepsi. N. Bellander.
70 Tvenne fall af prolapsus mucosæ urethræ. K. Widerström.
71 Saw and Sinus Opener for Intranasal Operations.—Tvenne instrument för inre näsbehandling. S. Lindström.
72 Den tropiska splenomegaliens parasit. A. Prag.

73 (No. 12.) *Hygieniska inrättningars inverkan på halsotillständet i städerna (influence of hygienic measures in cities). C. Lindman.
74 *Om Koch's gamla tuberkulin som terapeutiskt medel vid lungtuberkulos. J. Tillman.
75 Till operations-tekniken för anus præternaturalis. A. Reuterskiöld.
76 Boarding Out the Insane Under Administrative Control.—Om organiserad och under regelbunden sakkunnig kontroll stående familjevård för sinnessjuka och sinnesslöa. A Petren.

61. **Death in Diphtheria.**—Fischer has been studying the causes of death in 287 cases of fatal diphtheria. Only about 25 per cent. of the patients succumbed to general diphtheric intoxication, and a little less than 25 per cent. to tardy paralysis. All the others—more than 50 per cent.—died in consequence of pulmonary lesions. The latter was the cause of death in all the infants and in 83 of the 139 cases in children between 1 and 3, and in 16 of the 85 cases in children from 4 to 10, which included also 33 cases of fatal tardy paralysis. The 17 fatal cases of diphtheria in patients over 10 included 9 deaths from early general intoxication, 3 from tardy paralysis, and 3 from tardy sepsis. He remarks that far too little attention has been paid hitherto to secondary infection in diphtheria, and yet its importance as a factor in the fatal termination is emphasized by the above figures. Diphtheria antitoxin had been administered in every case. He is convinced that the only way to bring the diphtheria mortality actually under control is to supplement the diphtheria antitoxin with an effectual antistreptococcus and antistaphylococcus serum.

62. **When to Operate for Uterine Myoma.**—Essen-Möller's practice is never to operate so long as the myoma does not cause symptoms. But he keeps the patient under observation, and examines from time to time, ready to operate at the first indication of hemorrhage, rapid growth, or the like. He has applied these principles in 111 cases, with highly satisfactory results, as he describes in detail.

63. **Drainage After Laparotomies.**—Westermark relates his experiences with drainage as he applied it in 6 out of 272 abdominal operations. None of the rest had any drainage. He follows Mikulicz' technic for peritoneal drainage, and restricts its application exclusively to cases in which pus in the small pelvis has contaminated the field of operation, or when the virulence of the pus is unknown. Also when the intestines or bladder have been injured and pus is found, and also in all cases of lesions of the large intestine, even when there is no suppuration. He thinks that his results indicate the advantage of restricting drainage to these conditions.

65. **Gastrointestinal Disturbances Due to Arteriosclerosis.**—Rodhe describes a case of arteriosclerosis in a man of 65 in whom severe pains developed in the epigastric region, accompanied by palpitation of the heart and difficulty in breathing. A common cause for the heart and stomach troubles was suggested by the lack of any other symptoms from the digestive tract, and the absence of any signs of nervous or hysteric tendencies, but chiefly by the promptly successful result of treatment. No gastralgia of any other origin yields at once to heart tonics. Digitalis and potassium iodid were ordered in small doses, with a suitable diet. In another case a man of 65 with generalized arteriosclerosis complained of attacks of pain in the abdomen at times during the last few years. As in the first case the absence of signs of neurasthenia or hysteria and of digestive disturbances, and the prompt benefit from heart tonics, are presumptive evidence in favor of the theory that the painful attacks are due to the existing arteriosclerosis. The cases in which the attacks of pain occur alone, that is, unaccompanied by angina pectoris, are the most important from the differential standpoint. If the true cause is not recognized, the patient loses the benefit of appropriate treatment. The most characteristic feature is the strict localization of the pain in the epigastrium, appearing in persons of 40 or over. The pain is a sharp, stabbing or burning sensation, lasting generally only for a few minutes. It radiates sometimes to the liver, shoulder or arms, and ptyalism may be observed with a cold sweat and semi-unconsciousness. Between the attacks there is no pain, at least in the milder cases; in others there may be a dull, continuous ache. There are generally no other disturbances from the digestive tract, although sometimes constipation, diarrhea, meteorism, etc., may be observed. Other morbid processes are liable to occur in the digestive organs aside from those due to the arteriosclerosis, of course, and the latter may induce thrombosis, or even actual ulcer formation. The attacks in Rodhe's cases followed unusual physical exertion. Buch has reported a case in which the attacks were liable to come on when the patient lay down. Emotions and excesses are also liable to bring on an attack. On the other hand, the kind of food has no influence. The shortness of the painful attack, the radiation of the pains, and the occasional alternation with angina pectoris confirm the diagnosis. The same causes that elicit angina pectoris are noted in the history of these attacks. Pressure on the epigastrium sometimes induces pain similar to that of the typical attack. The pure arteriosclerotic gastralgia subsides or vanishes altogether under diuretics, digitalis or strophanthus. The syndrome may simulate ulcer, nervous dyspepsia or even cholelithiasis, until death in syncope occurs, and autopsy reveals the unsuspected sclerosis of the coronary, stomach, or intestinal arteries. Jaworsky has published reports of 4 such cases in which the patients suddenly succumbed to this form of arteriosclerosis while under treatment at Carlsbad for nervous dyspepsia.

66. **Operations for Nephritis.**—Ekehorn gives the details of 2 cases of acute infectious nephritis and of 4 of renal hematuria in chronic nephritis. He also analyzes an extensive list of articles on this subject. His conclusions are that hemorrhage from the kidney is not the prerogative of any special form of nephritis. It is much more likely to be the work of the toxic influences causing the nephritis rather than of the nephritis itself. He operated in all his cases and the operation always put an end to the hemorrhage. He discusses the question of why excessive pressure in the kidney induces hemorrhage, while nothing analogous occurs in other organs, and why an incision, relieving the pressure, arrests the hemorrhage. The purely mechanical influence of the altered position, adhesion to adjacent organs, pressure, etc., must not be underestimated, he remarks. Rovsing seems to be the only one who has given due consideration to the mechanical factor in renal hematuria.

73. **Influence of Modern Hygiene on Cities.**—Lindman gives a number of diagrams showing and comparing the amount and nature of the sickness and the mortality in 10 cities in Sweden during the last 30 years. The general mortality has dropped from 250 to 152 per 10,000 inhabitants. The decline has been most pronounced in the acute infectious diseases and diarrhea, also in nervous and pulmonary affections, while on the other hand the number of deaths from affections of the heart and vascular systems have increased, and the number of fatal puerperal affections averages nearly the same.

74. **Old Tuberculin as a Therapeutic Measure.**—Tillman relates his experience with 7 cases of phthisis in which he used Koch's old tuberculin. It was given in a subcutaneous, infrascapular injection, twice a week, and the patients afterward lay down for a time. They had all had a preceding course of sanatorium treatment and the disease was of 2 years' standing at least. Some were in an advanced stage, but improvement was manifest in all, especially after suspension for a time.

Gazzetta degli Ospedali, Milan.

Last indexed page 644.

77 (XXVII, No. 51.) *Aspergillosi polmonare acuta primitiva. U. Baccarani.
78 Sindrome labio-glosso-faringea per lesione del solo emisfero sinistro. A. D'Ormea.
79 *Postoperative Icterus.—Sull' ittero postop. G. Campora.
80. *Ricerca del glicogene nel fegato col metodo microchimico (glycogen in liver). G. Massari.
81 New Trephine.—Di un nuovo trapano per la formazione di un lembo osteo-periosteo-cutaneo. O. Cantelli.
82 (No. 54.) *Studio della patogenesi nervosa dell'asma. G. Gualdrini.
83 *La fonesi plessica meso-sternale nelle cardiomegalie (percussion findings in case of enlargement of the heart). G. Pollacci.
84 *Considerazioni statistiche sull'epitelioma del labbro (of lips). G. Serafini.
85 *Processo semplice e rapido ad uso del medico per scoprire l'arsenico, il fosforo e l'antimonio (simple test for phosphorus, etc.). F. Pedrazzini.
86 (No. 57.) *Parassitismo cellulare nella sifilide. I. Bandi.
87 *Contributo sperimentale alla leucoterapia nelle infezioni peritoneali. S. Diez and G. Campora.

88 Contributo alla patologia delle adenite cervicali suppurative acute della prima infanzia. G. Comforti and T. Bordoni.
89 (No. 60.) *Contributo alla chirurgia del polmone. E. Skultecki.
90 *Sul valore hypotensivo del veratrum viride. E. Pesci.
91 *Di un nuovo sensibilissimo reattivo dell' albumina nelle orine (test for albumin in urine). A. Tognetti.
92 (No. 63.) *Intorno all'azione del radio sul virus rabido (action of radium in rabies). G. Tizzoni and A. Bongiovanni.
93 Studio della polmonite traumatica fibrinosa. A Galluzzi.
94 *Un nuovo modo di riparare le perdite di sostanza ossea (bone repair). P. C. Morelli.
95 *Production of Toxins Destructive to Larvæ.—Studii sull' origine e condizioni di produzione delle tossine larvicide. A. Bongiovanni.
96 (No. 66.) *La diagnosi e la prognosi della affezioni cerebrali acute. Riva-Rocci.
97 Caso di amaurosi manifestatasi in seguito all'estrazione di un dente (after extraction of tooth). A. Santa Maria.
98 (No. 72.) *Gastric Functions After Splenectomy.—Funzioni gastriche in uno smilzato. T. Silvestri.
99 Sulla malattia di Stokes Adams. A. Perez.
100 (No. 75.) Ricerche sull'amilasi nel siero di sangue e nelle urine. G. Migliacci.
101 *La reazione di Weber-Rossel in rapporto dell'azione catalitica dei metalli pesanti (test for "occult blood" in feces after ingestion of mercury, etc.). G. Guyot.
102 Sulla pseudoparalisi eredo-sifilitica o malattia del Parrot. G. Setti.
103 (No. 78.) *Intorno alla cura della rabbia col radio (radium in rabies). A. Calabrese.
104 Tryranosomiasi sperimentale e gravidanza. A. Massaglia.
105 Emorragia del piede del peduncolo cerebrale destro (sindrome di Weber). F. Mariani.
106 Sopra 5 casi di pleurite reumatica a forma epidemica. G. De Polini.

77. **Primary Aspergillosis of the Lungs.**—Baccarani describes 3 cases, all occurring in one family, the patients ranging in age from 9 to 19 years. There were no known predisposing factors in these cases, 2 of which terminated fatally. The course of the affection was extremely rapid, suggesting fulminating typhoid in some respects. One patient, a girl, died of hemoptysis a month after the first symptoms, and another girl succumbed to progressive marasmus in 40 days. The youngest child. a boy, was treated with arsenic and iodid at the first symptoms, two weeks after the death of his second sister; at the same time the house was thoroughly disinfected. In 2 weeks the boy had completely recovered. The rapid emaciation in the fatal cases was more striking than Baccarani has ever witnessed in any other affection.

79. **Postoperative Icterus.**—Four typical cases are described by Campora. The operation was fixation of a wandering kidney in one and bilateral inguinal herniotomy in the others. There was no appreciable hemorrhage in any case. The icterus was probably of toxic origin, due to the action of the chloroform on a predisposed liver. Three of the the patients were alcoholics and one of these succumbed with intense icterus. edema, subdelirium, and coma. The others recovered.

80. **Glycogen in the Liver.**—Massari mounts in paraffin the sections of the liver to be examined, and treats them with a mucilaginous solution of iodin for examination under the microscope. The granules of glycogen show plainly with this technic at an enlargement of 47 diameters, and their distribution can be instructively studied at 297 diameters. The findings by this microchemical technic amply confirm the importance of the presence of glycogen in differentiating slow from sudden death. Also the important effect of putrefaction in causing the glycogen to vanish. In case of death from intoxication with illuminating gas, the proportion of glycogen in the liver cell is enormous in comparison with that found in other cases of deaths from violence or accident. No glycogen is found in case of acute and chronic phosphorus poisoning. In acute arsenic poisoning traces of glycogen are apparent, but not in the chronic cases. It is abundant in acute poisoning from corrosive sublimate, and traces are apparent in the chronic cases. The glycogen vanishes exceptionally slowly in case of putrefaction after poisoning with illuminating gas. Control chemical tests confirmed the accuracy of the microchemical findings.

82. **Pathogenesis of Asthma.**—Gualdrini thinks that nervous factors play a large part in the origin of asthma in some cases, and here relates 3 typical examples. The asthma came on each time without any appreciable cause aside from emotional stress on neuropathic antecedents.

83. **Percussion Findings with Enlargement of the Heart.**—Pollaci says that dulness over the body of the sternum is frequently an important sign of enlargement of the right heart. It is especially valuable when the breasts are so well developed that it is hard to trace the right outline of the relative cardiac dulness. He describes the mechanism and reasons for the changes in the percussion findings over the sternum under these conditions.

84. **Epithelioma of the Lip.**—Serafini's experience with 100 cases of epithelioma of the lip has shown that the glands become involved in two or three months, but that radical resection of tumor and glands is followed by a complete cure in 73 per cent. of the cases. Recurrence is generally observed within six months. Eight years elapsed in one of his cases, and he is inclined to regard this as rather a new growth than a recurrence after such a long interval. In 24 cases the recurrence was on the lip, and in 17 in the submaxillary region. Advanced age does not affect the results of operative treatment unfavorably. Even in case of repeated recurrence, the results may finally be a complete cure. All but 14 of his patients were men. They succumbed generally at last to some respiratory affection after the successful removal of the cancer.

85. **Test for Arsenic, Phosphorus and Antimony.**—Pedrazzini has modified slightly the Gutzeit test so that it can serve to differentiate intoxication from arsenic, phosphorus and antimony. A little of the substance to be examined is placed in a test tube with some sulphuric acid and a scrap of zinc (free from arsenic). A crystal of silver nitrate is placed on top of a disc of filtering paper laid over the mouth of the test tube. In case of the presence of arsenic, a gas is generated which turns the silver nitrate yellow or black. The same reaction occurs also with phosphorus and with antimony. These substances can be excluded and the findings limited to arsenic by using a solution of silver nitrate instead of the crystals. A bent tube conducts the gas from the first test tube into a second test tube containing the silver solution. When the gas generation is finished, the silver solution is filtered and the Gutzeit test is then applied to the filtrate with the solid silver nitrate as above. Phosphorus can be detected with the same technic, estimating the phosphoric acid with uranium, or potassium acetate. Antimony is revealed by washing the filtrate with a solution of tartaric acid treated with dilute hydrochloric acid. Trichlorid of antimony results, and, treated with hydrogen sulphid, an orange precipitate is thrown down.

86. **Spirochetes Inside the Cells in Syphilis.**—Bandi calls attention anew to the importance of the accumulations of spirochetes inside the cells. It is not a phagocytic process, as the spirochetes seem to be intact while the cell seems to have suffered. He believes that the condition indicates actual vital parasitism of the cell.

87. **Artificial Production of Leucocytosis in Peritoneal Infection.**—Diez has been experimenting with nucleic acid as a means of enhancing the vital resistance of the peritoneum to infection. The results were all extremely favorable, both in his experimental and clinical research. He advocates, therefore, injection of a 2 per cent. solution of nucleic acid as a preliminary to abdominal operations and also a few hours after perforation of the stomach or intestine.

89. **Surgery of the Lungs.**—Skultecki sutured the lung after a serious stab wound, and the patient suffered long from various mishaps resulting from infection of the deep lung tissue. This case and others in his experience have convinced him of the inadvisability of attempting to suture a stab wound of the lung. Immediate aseptic occlusion is the best technic, he believes.

90. **Veratrum Viride in Case of Increased Arterial Tension.**—Pesci tabulates the details of 19 cases to show the value of veratrum viride in reducing exaggerated arterial tension. He believes that it acts by soothing the heart and dilating the arteries. The indications as he formulates them are: 1, Chronic nephritis, in which it serves to prevent and to combat uremia and to postpone asystolia; 2. lead poisoning, in which it acts on the colics probably due to spasm of the splanchnic arteries; and, 3, the early stages of arteriosclerosis, in which it reduces the pressure and retards the progress of the affection. His dosage is .25 c.c. subcutaneously in uremic attacks, repeating the dose at half-hour intervals. In case of

nephritic hypertension with dyspnea or in lead colic, he gives from 20 to 30 and 50 drops in the 24 hours, keeping the drug up for 5 or 6 days. In hypertension from any cause he gives from 15 to 30 drops a day for nearly a week. He believes in suspending the drug for a few days and then resuming it. The above dosage refers to the fluidextract; he doubles the doses for the tincture. Of course the best results follow when the walls of the arteries are still capable of enlarging. In case they have lost their elasticity, then drugs are preferable which act on the blood, rendering it more fluid, or on the kidneys, promoting diuresis, or promoting the metabolism, like iodin. An appropriate diet is all-important, and should be maintained for months.

91. **Sensitive Test for Albumin in Urine.**—Tognetti describes the research which resulted in what he calls the "tanno-hydrochloric" test, which reveals albumin even in a proportion of 1 to 200,000. The advantages of tannic acid as a reagent for albumin have long been known, but it could not be used in urine as other ingredients of the urine also give a positive response. He has removed this difficulty by adopting the following technic, which, he says, renders the test reliable, instructive and extremely sensitive. He adds to the urine an equal amount of an alcoholic solution of tannin (1.5 gm. of tannin in 100 c.c. of 90 per cent. alcohol). The whole is then heated and an equal quantity of a 33 per cent. aqueous solution of hydrochloric acid is added—equal to the quantity of urine. In the presence of albumin the fluid becomes opaque and the albumin is gradually thrown down in a yellowish-white precipitate. In case of icterus, the bile pigments must first be removed by the Grocco technic, that is, by adding glacial acetic acid in the proportion of one-thirtieth or one-fiftieth of the amount of the urine. With the exception of this precaution, which is necessary with other tests for albumin, the tanno-hydrochloric test, he declares, can be regarded as free from causes of error. The combination of tannic acid, hydrochloric acid, alcohol and heat eliminates the usual drawbacks of tests for albumin.

92. **Action of Radium in Rabies.**—Tizzoni here mentions that he has been successful in saving 50 animals (rabbits) by means of radium after inoculation with rabies, which otherwise would have been fatal. Some of the rabbits have been under observation for more than a year. The curative and preventive effects of the radium were constant and directly proportional to the extent of the exposures. There is a remarkable lack of proportion, however, between the number of radioactive units in the specimen of radium and the curative effects observed, the smaller specimens being nearly as powerful as those five times larger. This shows that small amounts can be used in the clinic, free from the least dangerous tendency. This article is a reply to those who have contradicted his assertions. His latest researches, he says, only confirm his first announcements.

94. **Implantation of a Muscle to Repair a Defect in a Long Bone.**—Morelli describes a case in which he aided the healing of a rebellious osteomyelitic process and large defect by implanting part of a muscle. The cavity was in the humerus and after curetting he implanted part of the deltoid muscle, holding it in place with a few sutures. Healing was remarkably prompt and complete, and he recommends general adoption of this method of repairing a defect. Part of the belly of the muscle can be easily utilized and the procedure does not affect the functions of the muscle in the least. He is now conducting experimental research to learn the mechanism of repair afterward.

95. **Toxins Destructive of Larvæ.**—Bongiovanni has been studying the sudden destruction of the larvæ of the malaria mosquitoes which is sometimes observed in certain pools of standing water. He announces that it is the result of the action of toxins generated by a bacillus and streptobacillus, which he found constantly in such waters. These larvicidal toxins are not produced unless the water reaches a temperature of from 30 to 34 C.

96. **Diagnosis and Prognosis of Acute Cerebral Affections.**—Riva-Rocci analyzes 31 cases observed during the last 5 years and discusses the various differential points. He remarks in regard to the prognosis that in case of concussion of the brain the immediate prognosis is rather favorable, while the later should be guarded. In cerebral embolism, the prognosis depends on the heart and condition of the arteries and on the nature of the lesion. Syphilitic lesions are easily influenced by treatment, but the ultimate outcome has been worse in his experience than with lesions of other origin. The prognosis in encephalitis depends on the nature of the disease germ and the operability of the lesions.

98. **Stomach Functions After Splenectomy.**—In the case described the stomach functioning had not been specially examined before the removal of the spleen, but afterward it was found exceptionally perfect. The digestive functions were performed with rare perfection.

101. **Mercury, Etc., in Relation to Tests for "Occult Blood."**—Guyot applied the guaiac or aloin test for "occult blood" in the feces after administration of mercury, iron or other metallic drug. When large doses of mercury had been given the findings were occasionally positive. He ascribes this to the bile secreted in exceptional amounts under the influence of the cholagogue. The same results were obtained when cholagogues other than mercury were given (podophyllin or rhubarb).

103. **Action of Radium in Rabies.**—Calabrese's control research, he states, has entirely failed to sustain Tizzoni's announcements in regard to the curative or preventive action of radium in rabies. Calabrese's results were invariably negative

NEW PATENTS.

Recent patents of interest to physicians:

827066	Therapeutic match. Augustus P. Hafner, New York.
826659	Apparatus for automatically signaling the presence of deleterious gases in the atmosphere. Henri Hauger, Paris, France.
826949	Combination carton and gauze cap. Charles R. Lindsay, Jr., Chicago.
826685	Medical irrigator. John A. Noble, San Francisco.
827030	Sanitary house. Edward J. Noblett, Chicago.
826881	Catamenial sack. David A. Powdermaker, Philadelphia.
826805	Invalids' folding table. John Scheibner, Beaver Falls, Pa.
826614	Making hydrochloric acid and calcium carbid. William H. Seamon, El Paso, Texas.
826699	Diastatic substance and making same. Jokichi Takamine, New York.
826978	Combined invalid and surgical couch. Virginia Whittington, Valdosta, Ga.
826813	Artificial leg. Chester B. Winn, Buffalo, N. Y.
826815	Suspensory bandage. Henry J. Wortz, Philadelphia.
827207	Suspensory bandage and dressing retainer. Joseph L. Boehm, St. Louis.
827610	Washing and disinfecting apparatus. Joseph G. Branch, St. Louis.
827420	Making hydrosulfite solutions. Philip S. Clarkson, Beverly, N. J.
827092	Sanitary disinfecting and deodorizing block. Joseph T. Freestone, Rock Ferry, England.
827099	Medical device. Frederick Hofmann, New York.
827693	Hypodermic syringe. Frederick W. Korb, Cleveland, Ohio.
827162	Sanitary device for closets. Albert F. Lesler, New York.
827645	Ear-trumpet. Christopher W. Levalley, Milwaukee, Wis.
827383	Aseptic syringe. Patrick J. McElroy, Cambridge, and W. A. Randall, Swampscott, Mass.
827387	Apparatus for mounting and cooling statical ozonizers. Marius Otto, Paris, France.
827396	Sterilizer and pasteurizer. Sam G. Scanlan, Madison, Wis.
827399	and 827400 Apparatus for purifying and softening water. S. L. Sheuerman and J. F. Hand, Des Moines, Iowa.
827193	Surgical instrument. George Thrash, Hominy, N. C.
827133	Massage instrument. Irving A. Weston, Syracuse, N. Y.
828178	Bed-pan. Adele E. Betts, Kensington, Md.
828268	Making sulfur trioxid. Henry S. Blackmore, Mount Vernon, N. Y.
828022	Truss. Samuel A. Donnelly, Chicago.
827720	Artificial leg. Wm. E. Irwin, Yorkville, S. C.
827721	Producing salts of oxyacids of chlorin. Arthur E. Gibbs, Niagara Falls, N. Y.
827910	Apparatus for administering liquid anesthetics. John A. Hollenberger, Hagerstown, Md.
828221	Exercising apparatus for correcting deformities. Franz Langel, Cologne, Germany.
828292	Pocket audiphone. Eugene W. Schneider, New York.
828146	Forceps. James Somers, San Juan, Cal.
827896	Micrographic microscope. Otto H. F. Vollbehr, Halensee, near Berlin, Germany.
828007	Operating table. John D. Williams, Lewisville, N. C.
828809	Belt attachment for sanitary supports. Jennie L. Bornstein, Dayton, Ohio.
828722	Atomizer and like instrument. Frank C. Dorment, Kalamazoo, Mich.
828733	Cabinent for treating diseases by light. B. F. Fuller, El Reno, Okla.
828311	Vaccine shield. Christian Heidemann, St. Louis.
828651	Suspensory. Max B. Hirsch, Chicago.
828611	Capsule filling machine. Jasper F. Kobler, Niagara Falls, N. Y.
828754	Bed-pan. John Lopitsch and F. Naumann, Green Bay, Wis.
828758	Valve or stopper. Christian W. Meinecke, Jersey City Heights, N. J.

The Journal of the
American Medical Association

Published under the Auspices of the Board of Trustees.

Vol. XLVII. CHICAGO, ILLINOIS, SEPTEMBER 15, 1906. No. 11.

Address

THE ART OF MEDICINE.*

EDWARD HORNIBROOK, M.D.
CHEROKEE, IOWA.

Almost all the phases of medical thought are so thoroughly discussed in the books of specialists and in the periodical press that the general practitioner who has neither time nor opportunity to pursue new lines of investigation finds difficulty in selecting a theme which will not be already familiar to the members of this learned society. I have, therefore, chosen a subject which may invite criticism and which shall be suggestive, even if not instructive. Is the art of medicine improving? This question would be answered affirmatively, at first thought, by the majority of physicians. Yet there are many thoughtful men who, while admitting that scientific medicine has made wonderful progress during the last half century, are still constrained to believe that the Art as distinguished from the Science has deteriorated.

SCIENTIFIC RESEARCH AND MEDICAL PROGRESS.

Until recently the path of medical investigation might be compared to a plateau without obstructions, where the wheels of progress were unimpeded and where progression, though rapid, was often in a circle, ending where it began, or so near it that actual advancement was scarcely discernible. It is obvious that in the cycles of the ages substantial gains have been secured. In recent years the growth of the sciences has been so luxuriant that achievement has been slow, sometimes impeded and always laborious.

Isolated facts in biology, histology, chemistry and bacteriology have been collected with such industry and rapidity that an attempt to classify them and to draw practical conclusions causes discouragement and leaves the mind in doubt and uncertainty.

The medical journals teem with discussions of scientific subjects and devote little space to matters pertaining to the treatment and cure of disease. One who would venture to say that he did not believe in the germ theory of disease would be considered as an archaist, and yet none of us believe that a germ is the etiologic factor in all diseases. There are comparatively few maladies in which the specific germ has been isolated, and, therefore, our boasted scientific progress has only shed light on a few of the problems which daily claim our attention. Most of our useful knowledge has been gained from the accumulated experience of our ancestors and contemporaries and not from modern research.

What is disease? The Century Dictionary gives this definition: "A marked, painful or otherwise distressing physical condition, acute or chronic, which may result either in death or in a more or less complete return to health; deviation from the healthy or normal condition of any of the functions or tissues of the body."

What we know about disease of the nervous system has been chiefly acquired by close observation of the clinical symptoms, aided by scientific methods of investigation. Disorders of the chylopoietic viscera manifest themselves by their syndrome, and do not readily yield their secrets to microscopic, bacteriologic or *x*-ray investigation. The pathologic conditions resulting from disorders of the ductless glands may be studied scientifically, but such study has hitherto shed little light on their etiology or treatment. Skin diseases come in the same category, except the few of parasitic origin. Functional derangements elude instruments of precision and often baffle the experienced physician.

For preventive medicine scientific reasearch has done much; for the art of medicine the triumphs of modern investigation are limited. Eliminate diphtheria antitoxin and perhaps antitetanic serum and the other remedial agents which have been used on account of the discovery of specific germs are of questionable utility. When germs are known to be the etiologic factor, science and common sense have suggested methods more or less successful for preventing their entrance and for neutralizing the effects of the toxins which they produce. So far as we are enabled successfully to accomplish these objects, we acknowledge that science has blazed the way for our guidance, but she has contributed nothing which has shortened the duration or lessened the morbidity of scarlet fever, measles, whooping cough, influenza, typhoid fever, etc. What vaccination has done for smallpox is the result of observation and experience, not the result of the discovery of scientific facts or their application to the prevention or cure of disease.

Therefore, I question the wisdom of so framing the curricula of medical colleges that a large part of the time which might profitably be spent in the study of the symptomatology of diseases and perverted functions is devoted to a study of the multiform and varied appearance of germs, which as yet have been proved to be the cause of but few of the maladies which affect humanity.

For the treatment of these distempers accumulated experience is our only reliable guide; and the time which should be given to appropriating this experience is devoted to bacillus hunting or to that which yields infinitesimal results in enabling the student to battle with the many problems which will engage his attention in practice. What use can be made of the physician's knowledge of *Staphylococci*, *Streptococci* or *B. pyocyaneus* in his diagnosis or treatment of neurasthenia, hysteria or neuritis? What benefit will the various theories of immunity be to him or his patient in making a differential diagnosis between gastric ulceration and cholelithiasis? How can he apply his theories of phagocytosis in differentiating mitral insufficiency from aortic regurgitation?

---

* Oration on Medicine before the Iowa State Medical Society.

The study of the side chains of immunity is interesting, but it affords no assistance in distinguishing one from another the numerous family of skin diseases. Scientific research has done little to elucidate the disorders of the special senses, and less to enable us to understand the pathologic changes which affect mentality. How mental states affect bodily functions and how physical conditions react on mental processes seems to be beyond the pale of science, and yet how perplexing are the problems which they present for our consideration. Until we understand the force evolved in procreation, science will grope in the dark when grappling with cellular or nervous dyscrasiæ. Until we know something of the mind, or until it can be shown that it has a material organism discernible by the physical senses, science will avail nothing in elucidating the influence of mind over matter.

No analyst or synthetist has yet succeeded in bringing within our purview the nature of the force generated by impregnating the female germ or discovered the potentiality thus inaugurated which starts the cellular multiplication necessary to produce the perfect plant or animal. No instrument of precision, however great its power, and no form of light, electrical or chemical, has enabled us to observe or detect the elements of which thought is composed. We can observe the phenomena which both life and mind exhibit, but we do not understand what they are. The physical effects which life and mind produce may be learned by observation and experience, not by test tube, crucible, *x*-ray or microscope.

The conclusion is, therefore, inevitable that much of the progress in the art of medicine must come from close observation as well as from the meritorious and painstaking work of the pure scientist.

PROVINCE OF SCIENTIFIC RESEARCH.

Let me be not misunderstood. I do not disparage the aid which the collateral sciences have contributed to medical advancement. Research has done much to explain the reasons for the effect of the means which had been used empirically in the treatment of disease. Science has shed light on problems which were unsolvable before modern methods of investigation were introduced; but she has not supplanted the knowledge gained through centuries of experience.

In my opinion, her province is to aid, elucidate and explain, but not to set aside what has already been established. For example, the beneficent effects of vaccination were proven before any theory of immunity was exploited. Quinin had long been employed and its uses well understood before the *Plasmodium malariæ* was discovered. Iodin was used to arrest suppuration before the pus-producing cocci or bacilli had been thought of and before the words toxemia and intoxication found a place in medical nomenclature.

My contention is not that the sciences should be studied less, but that symptomatology and therapeutics should be studied more, so that instead of waiting for the proofs and demonstrations of science our art may be promptly used for the arrest and cure of even the diseases in which the microbe has been proven to be the etiologic factor.

> "Science still stops to reason and explain,
> Art claps the finger on the bleeding vein."

Our diagnosis is made from subjective and objective symptoms in 95 per cent. of our cases, and when scientific methods are invoked they generally confirm the conclusions reached by the old, reliable methods. To delay action until our opinions are confirmed by the scientists often causes us to lose the golden opportunity for combating and arresting disease. The symptoms of diphtheria are so pronounced that deferring treatment and not enforcing quarantine until a return can be obtained from the state bacteriologist is so fraught with danger that it might be characterized as criminal negligence. If in typhoid fever the proper dietetic and hygienic methods are not enforced until proof is afforded by the agglutination test or finding the bacillus, the mortality of the disease will be greatly increased.

The best results in the treatment of pulmonary tuberculosis are obtained when treatment is instituted before the bacillus has made its appearance, and this treatment should not be abandoned or relaxed even when the microscope negatives the diagnosis based on subjective symptoms and the knowledge gained by percussion and auscultation. During the last six months I succeeded in restoring a patient to health in whom a learned physician denied the existence of consumption, because he could find no bacilli. I have seen a patient die of tuberculosis within the last year when frequent examinations by the state bacteriologists gave negative results. I experienced the greatest sorrow of my life because two competent bacteriologists gave negative reports in my daughter's illness. I had diagnosed consumption; but, accepting the dictum of the time, "No bacilli, no tuberculosis," my efforts were relaxed and mourning and sorrow followed.

From these facts and hundreds of others which could be adduced it is obvious, I think, that it is better for the physician and safer for the patient to rely on the evidence gained by close observation, trained special senses and accurate knowledge of the symptoms of disease than to pin his faith solely to the revelations of the test tube, the *x*-ray or the microscope. These last have their uses in confirming opinions already formed or in causing us to reject opinions based on insufficient evidence, but they should not supplant the old and long-tried methods of investigation.

The tendency of the age is to extol the new and decry the old. A new fad or fancy propounded in a modern postgraduate school is seized with avidity, and too often influences practice to the detriment of the patient and the injury of the profession. As proof of this I might instance the indiscriminate use of the coal-tar preparations in recent times. I have seen them used with fatal effects in pneumonia, typhoid fever, smallpox, measles, diphtheria and septicemia.

IS THE ART OF MEDICINE DECLINING?

The practice of medicine is but the exercise of common sense, educated by acquisition of the learning and experience of our predecessors, fostered and strengthened, but not displaced, by modern methods. A knowledge of the functions of all the organs of the body is the first requisite. A knowledge of their derangements is the second, and a knowledge of the best methods of restoring them to their normal condition is the third and last, but not the least, in importance. Is our art improving or declining in that last most important particular?

I am saved from the necessity of answering this question by the timely publication of an address by Dr.

Billings[1] and the symposium on the proprietary medicine and the nostrum evil before the Chicago Medical Society.[2] To these articles I would direct the attention of all who are practicing medicine and prescribing remedies not in accordance with the teachings of the standard works on therapeutics and the directions of the Pharmacopeia, but in accordance with the literature supplied by the manufacturing chemists and the wise (?) and confident instructions of their traveling salesmen. Wisdom and experience which has not been gathered within the last decade is seldom accredited. Unless the views of the great authorities, like Watson, Austen Flint, Sr., Sir Astley Cooper or Valentine Mott, are reinforced by the teachings of some postgraduate professor or other evanescent luminary, their great names would soon pass into oblivion. The commercial instinct of some manufacturer might save them from such a fate by attaching their names to the recommendation of a nostrum or to a "patent medicine" advertisement. This growing disposition to ignore experience, together with the modern craze for bacillus hunting, and the manifest ambition of so many young practitioners to become great surgeons, even when they could not differentiate a dermatitis from smallpox, or measles from chickenpox, are, I think, among the causes which lead so good an authority as Sir Dyce Duckworth to say: "The art of medicine is fast declining."

The Incompetent Diagnostician.—This opinion is incidentally confirmed by Dr. Frank Billings,[1] of Chicago, who says:

> A large number of the medical profession do not practice medicine rationally. They have no clear conception of disease process. They do not study and examine the patients. No diagnosis is made at all or only from subjective conditions. Symptoms are treated. Headache, backache, indigestion, albuminuria, cough, constipation, dysmenorrhea, insomnia, nausea, dyspnea, etc., all call for drugs with no attempt to get at underlying causes.

This unscientific, not to say irrational, tendency is fostered, if not engendered, by the vast number of nostrums "strictly ethical" advertised extensively in medical journals and forced on the attention of the profession daily by those who make their living and the fortunes of their employers out of our credulity. Thus, we have headache tablets, cystitis tablets, gonorrhea tablets, dyspepsia tablets, heart tonics, liver tonics, etc., etc., besides medicines with the many uses of Frelich's tonic, for instance, which is advertised to cure "paralysis, vertigo, epilepsy, Bright's disease (early stages), neurasthenia, debilitating losses, mental failure, spinal weakness, nervous dyspepsia, all trouble affecting the brain nerve centers and spinal cord, and as a safe and powerful aphrodisiac." These specifics or antidotes to so many diseases are, I fear, becoming antidotes to thought and reasoning and observation, which are the essential qualifications of the medical practitioner.

LOSS OF LOVE AND ESTEEM OF PATIENTS.

The art of medicine is, I think, declining also in the very essential element of winning and holding the love and esteem of our patients. Without this love and esteem we can not exert the psychical influence so essential in sustaining the hopefulness and fortitude of the suffering and afflicted. An important function of the family physician is to amuse and support the spirits and hopefulness of the patient, so as to give Nature the best opportunity for curing the disease.

It is unlikely, I think, that the waning affection of the people for their family physician is caused by the want of assiduity or the lack of interest of the medical attendant. No one except the patient and his family is so deeply interested as the physician. No one gives the thought and endures the anxiety which he does; and yet it can not be denied that the gratitude and affection which he once received is not given with the ungrudging generosity with which it is given to the trained nurse. The payment of the fee, or the refusal to pay, discharges the obligation to the physician, and gratitude, if any is bestowed, assumes the form of a "lively sense of benefits to come."

The best years of his life may be given in the most self-sacrificing manner to the service of the people of any community and his departure will bring no manifestations of appreciation. His skill and motives may be questioned by those he has benefited, without their being told, in the words of Whitcomb Riley, that they are "the most ungratefull'est of men." The oldest and most painstaking physician may die and there will be no general manifestations of sorrow to equal that described by Will Carleton:

There's a gathering in the village, that has never been outdone
Since the soldiers took their muskets to the war of '61;
And a lot of lumber wagons near the church up on the hill,
And a lot of country people, Sunday-dressed and very still.

. . . . . .

But perhaps it still is better that his busy life is done;
He has seen old views and patients disappearing, one by one;
He has learned that death is master both of Science and of Art;
He has done his duty fairly, and has acted out his part.

And the strong old country doctor,
And the weak old country doctor,
Is entitled to a furlough for his brain and for his heart.

What are the causes for this waning affection? Is it that we fail to bring the philanthropic aspect of our labors before the notice of the public? We do not parade our philanthropy, but let a great calamity, like the San Francisco horror or even the Pomeroy cyclone, come on us and the services of the whole profession will be given gratuitously. Is it not possible that the personal services which we once rendered and which are now relegated to the trained nurse had much to do with cementing the bonds of friendship between ourselves and our patients?

Perhaps our devotion to science and our desire to ascertain the cause of suffering lead the friends to surmise that our interest is greater after the death of their loved ones than it was before. It may be that our delay in reaching conclusions and not applying remedies until we have exhausted the resources of science in discovering the cause of the symptoms leads them to think that we are more interested in the scientific aspect of the case than we are in the welfare of the patient.

However this may be, let us remember that our mission is to save life when possible, prolong it when we can, and, if we can not cure, to alleviate pain and suffering, to "soothe the pillow of the dying and smooth the pathway to the grave."

"This be our task; Henceforth our path is straight,
Wherever anguish is, or grief, or pain
There be our places; Then let us do our part,
Striving to antidote death's deadly bane
By our divine and ever-blessed Art."

Treatment of Obesity.—P. H. Sunde, Los Angeles, in the *Southern California Practitioner*, declares that to give medicines in obesity and to disregard the diet and other modes of living, is simply ridiculous. Medicines at best, he states, must only be regarded as secondary measures.

---

[1] "The Medical Profession and the Medical Journals in Relation to Nostrums," published in The Journal A. M. A., March 10, 1906, pp. 715-719.

[2] The Journal A. M. A., May 5, 1906, pp. 1333-1345.

Original Articles

THE DIETETICS OF OBESITY.*

ALFRED C. CROFTAN, M.D.
CHICAGO.

The reduction of obesity is an important therapeutic task, not so much when considered in the light of a tribute to the vanity of the afflicted, but when regarded as a necessary step toward removing adipose tissue that is producing disagreeable or dangerous complications about important organs, notably the heart and arteries, the bronchi, the digestive apparatus and the nervous system. It will often be found that these complications only disappear when the fat is reduced. We see here similar conditions as in diabetes, where, too, many of the complications rapidly disappear when the sugar is reduced; whereas in diabetes, however, the causes that determine these complications are chemical, in obesity they are mechanical in character.

The methods at our disposal for reducing obesity are chiefly dietetic. Second in importance is the regulation of the muscular exercise. These two means, singly or combined, usually suffice to accomplish the desired purpose, for with a decrease of the intake of fat-forming pabulum and an increase of its destruction by exercise the fat content of the body must needs dwindle. These measures may, to advantage, be enforced by certain hydrotherapeutic and medicinal means, the latter finding their chief sphere of application, however, in the symptomatic treatment of the complications of obesity.

One can conveniently distinguish three degrees of obesity that have been aptly characterized by a German writer as the enviable, the comical and the pitiable stage, the first presenting itself as a pleasing rotundity, the second as a jovial embonpoint of the Falstaff type, the third as a sad, unwieldy and, to our Caucasian tastes, disgusting deformity. Each of these three forms requires particular treatment. In the first form no attempt need be made to reduce the amount of fat, but every effort should be put forward to prevent its further development, particularly if premonitory signs of complications about the thoracic or abdominal organs begin to make their appearance. In the second and third forms, however, it becomes necessary to institute more or less energetic restrictions with the object in view of causing a loss of fat.

The laity and many physicians to this day direct their attention chiefly to the quality or the preparation of the food in reducing obesity. Certain articles are said to form fat and others not. This idea is erroneous. Broadly speaking, carbohydrates and fat foods should be reduced, and not the albumins. This rule is to be observed not because albumin forms less fat than carbohydrates or fats, but because the reduction of the albumin below certain normal average requirements, as will be explained below, is a dangerous and precarious procedure, whereas the fats and carbohydrates can be much reduced without much detriment to the individual.

One may say broadly and with certain reservations that will be presently discussed that any article of food can form fat, according to its caloric value; that the introduction of more calories either in the form of albumins or fats or of carbohydrates than are required to maintain normal nutritive equilibrium may lead to the deposit of fat in the tissues, whereas the introduction of less calories leads the organism to promptly attack chiefly its fat reserve to make up the caloric deficit.

THE SCIENCE OF REDUCTION CURES.

The first step, then, in instituting a reduction cure should be to determine the normal caloric requirement of the individual, assuming that he were not obese. This can be done by consulting the following table on which will be found the normal average weight for individuals of a certain height, both men and women:

Age (Years)	Men		Women	
	Height (In Meters)[1]	Weight (Kilogrammes)[1]	Height (in Meters)	Weight (Kilogrammes)
0	0.5	3.2	0.49	2.91
1	0.7	9.45	0.69	8.79
2	0.77	11.34	0.78	10.67
3	0.86	12.47	0.85	11.79
4	0.92	14.23	0.92	13.00
5	0.99	15.77	0.98	14.36
6	1.05	17,24	1.10	16.01
7	1.11	19.10	1.15	17.54
8	1.16	20.76	1.18	19.08
9	1.22	22.65	1.19	21.36
10	1.28	24.52	1.25	23.52
11	1.33	27.1	1.30	25.7
12	1.39	29.8	1.35	29.8
13	1.44	34.4	1.40	32.9
14	1.49	38.8	1.45	36.7
15	1.55	43.6	1.49	40.4
16	1.59	49.7	1.54	43.6
17	1.63	52.9	1.56	47.3
18	1.66	57.9	1.56	51.0
20	1.67	60.1	1.57	52.3
25	1.68	62.9	1.58	53.3
30	1,68	63.7	1.58	54.3
40	1.68	63.7	1.58	55.2
50	1.67	63.5	1.53	56.2
60	1.63	62.9	1.52	54.3
70	1.62	59.5	1.52	51.3

By multiplying this weight by 30 to 35[2] the approximate caloric requirement can be obtained.

Assuming that the patient were 1.7 meters tall, then, according to the table he should weigh about 61 kilos and would normally require about 61 × 35 = 2,135 calories a day.

The diet should now be arranged in such a way, with the aid of tables giving the caloric value of different articles of food, that this number of calories is furnished, and not more nor less. This constitutes the mildest form of underfeeding, the caloric intake being insufficient only relatively, i. e., as compared to the abnormal bulk of the patient. If the patient does not lose weight on such a diet containing the full normal caloric requirement, then it is necessary to reduce the caloric intake still further.

THE THREE DEGREES OF REDUCTION CURE.

It is convenient in obesity, as in diabetes, to arrange three degrees of reduction cures. In the first degree the caloric requirements are reduced to 4/5 of the normal, in the second to 3/5, and in the third to 2/5. Calculating this for an individual, e. g., requiring 2,500 calories as the normal, the first degree calls for the administration of foods possessing a caloric value of about 4/5 of 2,500 or 2,000, the second 3/5 of 2,500, or 1,500, and the third.

---

* Read before the Section on Medicine of the Illinois State Medical Society, Springfield, 1906.

1. One meter = 39.37 inches or 1 yard 3 1/3 inches (English). One Kilogramme = 2 lb. 3 oz. 2 dr. (avoirdupois).

2. For measuring the nutritive value of the different classes of foods, the term "calorie" has been imported from the realm of physics. A calorie is that amount of heat that is needed to raise the temperature of 1 kilo of water 1 degree (Celsius). Each article of food, it has been found, in process of metabolism (i. e., of assimilation, oxidative disassimilation and elimination) in the body generates a definite quantity of heat, or the mechanical equivalent of this heat in labor. Expressed in calories:

1 gr. of proteid furnishes....................4.1 cal.
1 gr. of carbohydrate furnishes..............4.1 cal.
1 gr. of fat furnishes ....9.3 cal.

It has further been determined that a normal adult requires from 30 to 35 calories a day per kilo of body weight, and that these calories can be furnished by any one or all of the three classes of food vicariously. (Croftan: Clinical Urinology, page 73.)

of about 2/5 of 2,500, or about 1,000. The popular cures of Banting, Oertel, Epstein, Hirschfeldt and others possess a caloric value lying between 1,100 and 1,600 only; they are consequently reduction cures of the third degree and, as will be presently shown, usually far more severe than is safe or necessary.

The rapidity with which fat is lost in these three degrees of reduction cures varies.

In the first degree the loss is usually very slow, the patients rarely losing more than two or three pounds a month, and even this slight reduction can only be accomplished if they indulge at the same time in considerable physical exercise. This four-fifths diet is useful chiefly in preventing the further increase of fat in subjects who are showing a tendency to obesity. It is eminently suitable for continued use and does not require any great sacrifice on the part of the patient. It is hardly ever necessary to calculate the caloric value carefully in this light form, for all one has to do is to allow meat only once a day, to reduce the amount of fat and starchy and sweet foods somewhat, to restrict or forbid alcoholic beverages, to give "filling" foods of small caloric value (see below) in abundance, to restrict the liquid intake to 1 to 1¼ liters of fluid a day, and to order abundant physical exercise.

The second degree is also particularly useful for continued use. It should be adopted (1) for very strong and very fat subjects who want to get rid of surplus fat and can safely indulge in very active physical exercise; (2) for individuals who are not only fat, but in whom complicating disorders about the heart, arteries, bronchi or digestive apparatus render it impossible to "work off" fat by exercise, so that the necessary reduction of the fat must be brought about in the beginning, i. e., until the complications improve or disappear, by dietetic restrictions alone; (3) for strong fat individuals who can not at once tolerate a third degree reduction cure without developing alarming symptoms of weakness, particularly about the circulatory and muscular apparatus; in the latter class of cases the three-fifths reduction cure is used as a transition diet to the third degree and is intended to gradually accustom the patients to restrictions of a more severe order. This second degree, too, leads only to relatively slight and slow losses of fat, more than six to ten pounds rarely being sacrificed a month.

The third degree, finally, is a rapid reduction cure. It must be carefully supervised and would best be carried out in an institution. Here we frequently find that the loss of fat is rapid in proportion to the obesity of the individual, showing that it is the surplus adipose tissue that is being sacrificed and not the albumins of the body. Combined with systematic exercise and drink restriction (see below) as much as thirty pounds a month can be lost with safety. A reduction cure of the third degree should never be carried out for indefinite periods, and six weeks is the longest time during which this serious restriction of the patient's nourishment should be allowed. In many cases the intermittent plan will have to be adopted, i. e., the patients are placed for four to six weeks on the rigid plan, then for a month or two on the second degree, and then back again to the rigid diet until the desired loss of flesh has been produced. It will be seen that here very similar principles are adopted as in the reduction of diabetic glycosuria.

While it is true that energetic starvation often rapidly leads to a loss of weight greater than that which can be accomplished by more gradual and more moderate means, such rapid reduction cures, as typified, for instance, by the Banting system, which is so popular among the laity, are rarely without serious danger to the various organs that are commonly involved in advanced degrees of obesity, nor are the results, broadly speaking, permanent. In very young people and in very old people rapid reduction cures should be altogether eschewed; for in *children and in adolescent* subjects irreparable damage is often done, growth stunted and serious complications engendered, whereas in old people the results are usually very unsatisfactory and never without danger, while the effects at best are exceedingly transitory.

THE ART OF REDUCTION CURES.

The question in regard to the kind of food that should be allowed in instituting any reduction cure and its mode of preparation has been the subject of much controversy for many years. The greatest care should be exercised, as mentioned above, not to attack the albumin content of the body; hence it is important to give the known minimum necessary to maintain adequate nutrition—and not less—to all cases in order that the patients may not be forced to consume the albumins of their proper tissues. This minimum lies somewhere between 60 and 80 grams a day, so that this amount, which corresponds approximately to 400 to 600 grams of lean meat, at least should be invariably supplied. No difficulty should ever be experienced in meeting this requirement. Notwithstanding the claim of some doctrinaires, excessive meat feeding is not only unnecessary, but may be directly harmful in instituting reduction cures. A great deal will depend on the tastes and the previous habits of the patients. If they have not been excessive meat eaters, there is no reason why they should be forced to eat much meat. If they have been abundant meat eaters, they may safely continue meat eating, provided the intake is not so large that the total caloric value of the food is increased above the prescribed and calculated limit.

The next question to decide is whether the carbohydrates or the fats are to be chiefly restricted. Here, again, a very virulent controversy has been going on for many decades. This is not the place to enter into a discussion of the merits or demerits of the different theories advanced. From a practical standpoint it is best to reduce the fats and to give relatively large quantities of such carbohydrate foods as possess bulk; for the latter, as a rule, incorporate a small caloric value, while, at the same time, fully satisfying the patient. The idea that fat forms fat in the body more than carbohydrate has been shown to be erroneous; carbohydrates, in fact, seem to be more readily deposited as reserve fat in the tissues than the fat that is eaten.

To summarize, therefore, the diet in reduction cures should be arranged in such a way that the individual receives an amount of albuminous food, incorporating at least 60 to 80 grams of albumin. This is necessary in order to maintain nitrogen equilibrium and to protect the tissue albumins. The remaining number of calories that are to be supplied may be vicariously furnished either in the form of fats or carbohydrates. Of the two the carbohydrates, however, especially if they are voluminous, should be given the preference.

The distribution of the meals is sometimes of importance. The best plan is to give three meals during the day and, in addition, two or three small meals between, the latter preferably consisting of articles like bouillon, coffee or a little fruit, that all possess a small caloric value. They serve the purpose of keeping the patient comfortable, avoiding disagreeable sensations of weakness and gastric emptiness and at the same time preventing the patient from becoming too ravenously hungry at meal times and consequently overeating.

THE RESTRICTION OF LIQUIDS.

One other important principle must be observed in feeding diabetics, viz.: the liquid intake should be restricted. Nothing is easier than to rapidly reduce the weight of an obese subject by restricting the liquid intake to a minimum. This loss of weight becomes particularly apparent during the first four or five days of the ure. It is due, in the first place, to a direct loss of water rom the tissues; in the second place, to the fact that an dividual drinking very little water does not eat as ich as one taking a normal amount of liquid. The reiction, therefore, in the beginning is a useful procedmore for physic that for physiologic reasons; for patients, when they notice how rapidly they are g flesh, acquire that confidence in the method that important if they are to carry out the more or less isagreeable and stringent orders that must be enforced. No permanent effects, however, are obtained from this restriction of liquids, and the patients regain the lost weight as quickly as they lost it so soon as they begin to increase water drinking. Nevertheless, even in cases in which the restrictions are to be continued for a long time, a reduction of the total liquid intake to about 1 to 1½ liters in the 24 hours is a useful adjuvant. It renders it easier for the patients to live up to their restrictions and it is also beneficial in advanced cases of obesity with complications, because it spares the heart and the kidneys. In cases, finally, that suffer from excessive sweating, the restriction of liquids is a very useful procedure to remove this disagreeable symptom.

SPECIAL ARTICLES OF FOOD.

Alcohol may be administered to obese subjects, provided the caloric value of each gram of alcohol is carefully included in the calculation. It should be allowed particularly in cases that have been accustomed to a little alcohol all their lives; for here withdrawal of alcohol is not only an unnecessary hardship, but may even constitute a source of danger, especially if a weakened heart is suddenly robbed of its accustomed stimulus.

In selecting meats for obese subjects, lean varieties should be given the preference. Lean meat contains about 20 per cent. of albumin and 1.5 to 2.0 per cent. of fat, so that 100 grams of lean meat, weighed raw, furnish about 100 calories. It is necessary, of course, that the meat should be prepared in a very simple way, i. e., it should be either stewed, roasted or broiled. All meats that are prepared by frying or served as ragouts or with bread crumbs, sauces and gravies contain incalculable amounts of fat, so that their caloric value may assume very large proportions. It is always best, therefore, to forbid the use of any but lean meats, plainly prepared.

Among the animal foods that an obese subject can eat with impunity are a number of delicacies that are taken only in small quantities and, on account of their flavor, are very agreeable additions to the diet; thus, according to a table published by von Noorden, 100 calories are ontained in:

45 grams of caviar.
40 grams of sardines.
100 grams of boiled lobster.
160 grams of crab meat.
120 grams of oysters (equal to about 14 to 18 oysters of
medium size).
25 grams of paté de foie gras.

Cheese also serves a useful purpose, for, taken even in very small quantities, it is very filling. Thus Swiss cheese, American cheese, Cheddar and Chester cheese contain about 28 per cent. of albumin, 30 per cent. of fat and 2 per cent. of carbohydrate, and 25 grams of these cheeses furnish about 100 calories.

Milk is a very useful addition to the bill of fare of obese subjects, provided its caloric value and the water it contains are included in the calculation. One hundred c.c. of milk furnish about 60 calories. This amount can safely be allowed with tea and coffee. Buttermilk is still more useful, for 100 c.c. of this only contain from 40 to 45 calories and a whole quart about 250 calories.

Thin soups and bouillon and beef tea are exceedingly useful articles, for their caloric value is practically 0. They are filling, they taste well, and the patient eating a large plate of bouillon imagines that he is getting something of value to eat.

Rich sauces, as stated above, should be absolutely forbidden, because they are made of large quantities of fat, flour, eggs, so that their caloric value can hardly be calculated. Articles made of flour or rice, like noodles and macaroni, puddings, etc., should not be allowed in the strict reduction cures. In the second and third degrees, however, small quantities may be permitted as a relish. If they are given, each tablespoonful of these articles should be figured as representing about 30 calories.

Potatoes are also permitted, provided they are given in small quantities and are either baked, boiled or mashed. One hundred grams of potatoes contain about 1.5 per cent. of albumin and 18½ per cent. of carbohydrate and possess a nutritive value of 80 calories.

Among the vegetables, those varieties that grow underground as well as those that grow in pods should be forbidden or restricted, because they contain very large and varying amounts of carbohydrates. If they are permitted at all in the lighter reduction cures, their caloric value should be carefully determined. All the other vegetables are exceedingly useful articles of diet in obesity, for they possess a very small caloric value in proportion to their bulk and consequently fill the stomach and rapidly produce a sense of satiety; incidentally they act favorably on the function of the bowel. They should be served only boiled in salt water, without the addition of cream, butter, flour, etc. If flour or fats are used in preparing vegetable dishes, the amounts should be carefully weighed and their caloric value considered.

Fruits of all kinds, with the exception of bananas, sweet grapes, figs, dates, raisins, are permitted without reserve; they, too, are very filling and act well on the digestive apparatus and constitute a great relish without, at the same time, possessing a high caloric value. About 100 calories are contained in 220 to 250 grams of fruit.

The use of bread is permitted in obesity, only, however, if the bread is carefully weighed and its caloric value considered. Here the same rules obtain as in the feeding of bread to diabetics, i. e., those varieties that are made of vegetable albumin (gluten breads, aleuronat bread, etc.) are particularly useful if they are baked so as to become fluffy and voluminous, for they satisfy the eye and the mind and are filling without possessing a very large caloric value.[3]

---

[3] Most so-called diabetic breads contain approximately 50 per cent. of carbohydrate. The vegetable albumins (aleuronat, roborat, plasmon, gluten) all contain about 5 per cent. of carbohydrate. These breads are made from such flours plus a certain amount (one to four parts) of ordinary flour. They should, hence, only be used as an equivalent for white bread in the proportion of about 4 to 1. Their indiscriminate use, which is so popular among the laity, who imagine that these breads can safely be taken ad libitum, is, therefore, to be condemned as dangerous. They fulfill a useful purpose, however, owing to the fact that much more of the various diabetic breads can be eaten as of ordinary white or rye bread and still no greater amount of carbohydrate be administered.

A great many mineral waters enjoy deserved popularity in the treatment of obesity, notably the waters of Kissingen, Vichy, Homburg, Carlsbad and Mariensbad. It is a futile task, however, to attempt the reduction of obesity by the use of these waters alone. It is possible, of course, by producing profuse watery diarrhea with the aid of these waters to cause a considerable loss of water from the tissues and hence a reduction in the weight of the patient. This practice is of some use for psychologic reasons, because the rapid loss of weight in the beginning of the treatment makes a great impression upon the patient and renders him more willing to follow directions later on. The indiscriminate use of mineral waters is, however, to be condemned; for if the diarrhea is allowed to persist too long the effect is without doubt weakening, and this practice, moreover, especially in obesity, reacts unfavorably upon the blood pressure and the heart.

These patients, it is true, do very well, as a rule, in resorts in which these waters are taken, but the effects are to be attributed only in a very small part to the drinking of the particular water (witness the indifferent effects obtained from the use of these waters of salts at home) and in much greater part of the careful and strict regulations in regard to exercise,[4] general mode of life and diet that the patients undergo much more willingly and conscientiously at a watering place than at home. Fully as useful, probably safer, and by all means cheaper is the treatment of obesity in an institution where a like control can be exercised over the patient's diet and habits.

100 State Street.

TREATMENT OF PROGRESSIVE ATROPHY OF THE OPTIC NERVE DUE TO ACQUIRED SYPHILIS.

BY SUBCONJUNCTIVAL AND INTRAVAGINAL INJECTIONS OF SUBLIMATE OF MERCURY.*

CHARLES STEDMAN BULL, A.M., M.D.
NEW YORK.

The treatment of syphilitic atrophy of the optic nerve is a subject which taxes all our patience and ingenuity. So universally unfavorable is the prognosis that the ophthalmic surgeon is ready to grasp almost any means which promises a solution of the problem. All surgical interference with the optic nerve itself, such as incision of the nerve sheath in several places, or elongation of the nerve by stretching, has yielded such imperfect and inconstant results that it can not any longer be recommended and has been abandoned. The same may be said of sympathectomy, which has so recently been vaunted as a remedy for atrophy. The constant current, and even static electricity, have been faithfully tried and have usually proved unavailing. Much has been claimed for the treatment by vibratory massage, but I have never personally known of a case of atrophy which has been permanently, or even temporarily, benefited by this method.

In advanced cases of syphilitic atrophy of the nerve I believe mercury administered internally to be useless, and it may do real injury. Roborant treatment, directed to the general health, in these cases sometimes aids in retarding the degenerative process.

As we all know, there are clinically several forms of atrophy of the optic nerve: the partial, the total, the stationary and the progressive. The cases of partial atrophy are generally stationary. The instances of progressive atrophy met with in syphilitic patients are the most unfavorable. These cases are always bilateral, and the pupillary disturbance, or loss of reflex action of the iris, is often observed within the first year after infection has occurred, and may, therefore, be regarded as a warning of impending atrophy. It may accompany beginning optic atrophy before the loss of sight is sufficient to explain it. The evolution of an optic atrophy is very irregular, and total blindness is often complete in one or two years, though occurring usually sooner in one eye than the other; and some central fibers may remain intact during the remainder of the patient's life. It is in this small minority of cases that we are prone to attribute the arrest to whatever method of treatment we are at the time employing. It is impossible to say how many of these cases of arrest of the degenerative process are due to the treatment adopted, and a therapeutic effect can only be expected when the optic nerve fibers have been merely compressed by the hypertrophy of the connective tissue framework of the nerve.

USE OF SUBLIMATE INJECTIONS.

Subconjunctival sublimate injections have been employed in the treatment of optic nerve atrophy by various authorities, but hitherto with but little success.

Darier is probably correct in saying that they are contraindicated for the time being whenever the absorption of the fluid by obstructed lymph-channels is rendered difficult or impossible by a circulatory stasis, for in such cases they are irritating and more harmful that useful. It is going too far, however, to say that as an anti-syphilitic method subconjunctival sublimate injections have a rapid and intense action on specific ocular manifestations at all stages, for in most of the chronic cases of deep-seated eye trouble, notably of the optic nerve, this does not hold true. The statement that the chief contraindication to subconjunctival injections lies in an engorgement of the circumcorneal circle of vessels is true only of the lesions of the anterior parts of the eye, and does not apply to optic nerve atrophy.

The subconjunctival injection of the various salts of mercury is more or less painful, the cyanid being the most so. In endeavoring to prevent or diminish the pain of mercurial injections do not add a solution of cocain to the sublimate solution, for the cocain is decomposed at once. Akoin lessens the pain, but is precipitated by the least alkalinity of the solution. It is better to inject a few drops of a 5 per cent. solution of cocain under the conjunctiva five or ten minutes before the sublimate injection is made. If akoin is used a 1 per cent. solution is of sufficient strength.

---

[4] The element of muscular exercise is second in importance only to the regulation of the diet in obesity. *It can readily be calculated* that a certain amount of muscular exercise causes a loss of a certain amount of fat. Oertel, who has studied, more than anybody else, the effect of graduated exercise, especially graduated hill climbing, on obesity and the action of the heart, based his original recommendations on definite calculations as follows: Assuming that a man weighing 60 kilograms ascends an elevation each day of 100 meters, then the labor performed is equal to $60 \times 100 = 6.000$ kilogrammeters; as a matter of fact, much more energy is expended, for the external labor produced represents only about 30 per cent. of the total energy developed; thus such an individual in a day develops fully 20.000 kilogrammeters of energy. As 425 kilogrammeters of muscle work require 1 calorie, 20,000 kilogrammeters require 47.06, and this amount of caloric value is furnished by $\frac{47.06}{9.3}=5.06$ of fat. It will be seen, therefore, that such an individual must consume 5.06 of body fat to raise his body 100 meters. It is immaterial, *of course, according* to the laws of the conservation of energy, whether or not this elevation is reached within a short time or within a long time, by a vertical path or by a long series of inclined paths.

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Zossenheim[1] has used injections of sublimate in many cases of optic nerve atrophy, but reports not a single case of encouraging results.

Dufour prefers sublimate to cyanid of mercury, of the strength of 1 to 3,000, and never injects more than half a syringeful. He keeps his patient in bed for two days with both eyes bandaged. If there is no improvement after the eighth injection he gives up the treatment.

Senn[2] prefers the cyanid of mercury to the sublimate in cases of optic atrophy, but reports no favorable results.

METHOD OF TREATMENT.

The principles of subconjunctival injection laid down by Darier would apparently apply only to the anterior segment of the eye, and their effect on the aqueous humor through Schlemm's canal and Fontana's space. If, however, the efficacy of subconjunctival injections depends on the absorption of the injected substances, the moment an isotonic equilibrium is established. there is no reason why this condition may not be induced in the posterior channels of filtration by subconjunctival injections far back of the equator of the eye, and thus an effect be produced theoretically on the optic nerve. These posterior injections must not be made near the limbus, nor too deep under the conjunctiva, where the capsule of Tenon is intimately attached to the sclera. In making the injections it is better first to incise the conjunctiva and separate it for some distance from the sclera by a strabismus hook and then introduce the needle far back, hugging the sclera, and inject slowly. There is less pain from the injection if the episcleral tissue is not injured.

I use a Pravaz syringe with a fine needle of iridised platinum, which can be sterilized by passing it through a gas flame. The liquid to be injected must be sterilized by boiling and allowed to cool to blood temperature and is then injected. The injection is made in the superotemporal region, tangentially to the sclera, and the liquid must not be allowed to extend toward the limbus. Hence the value of dissecting the conjunctiva from the sclera in the direction backward toward the optic nerve entrance before the injection is made.

This method of treatment was carried out on twenty-five cases of progressive atrophy of the optic nerve, due to constitutional syphilis. They were cases of simple atrophy and were not preceded by any intraocular signs of papillitis or neuritis. They were all private patients under my own care until the treatment was abandoned as useless. They had all been subjected to one or more full courses of thorough anti-syphilitic treatment by skilled syphilologists, which had been carried out for a varying period from one to two years, or until no constitutional symptoms had appeared for some time.

The presence of tabes or disseminated sclerosis was so far as possible excluded.

Before the treatment by subconjunctival injections was begun the patients were subjected to a course of strychnia by hypodermic injections, pushing the dose of the drug to the extreme of toleration. In every case the observations, the testing of the vision and the visual field were made by myself. Some of the cases had been previously treated by the interrupted current and by static electricity by other physicians, and two of them had undergone a prolonged treatment by vibratory massage without any benefit.

The shortest interval between the occurrence of the initial lesion and the first failure of vision was two years, and the longest interval was twenty-three years. From investigations made by Januskiewicz, covering many cases, it has been found that the shortest interval in any reported case between the contraction of the disease and the failure of vision was six months, and the longest was twenty-nine years. The failure of vision occurred most frequently from five to ten years after the appearance of the chancre.

RESULTS OF TREATMENT.

In none of the cases was there any permanent improvement of the vision by the treatment noted, and in only three was there any temporary improvement. In no case did the injections cause any acceleration of the loss of sight.

In three cases, besides the subconjunctival injections, an intravaginal injection was made directly into the sheath of the optic nerve. For this purpose the tendon of the external rectus muscle was divided, sutures were introduced through the tendon so as to allow of its reattachment to the eyeball, and the muscle was then drawn upward and outward away from the wound. The conjunctiva was then carefully separated from the sclera as far as the apex of the orbit by strabismus hooks, and the optic nerve was drawn forward by a blunt hook. The sheath of the nerve was then grasped by a pair of fine forceps and lifted up, and the needle was pushed through the sheath parallel to the nerve, and the injection was made. The tendon of the muscle was then stitched to its former line of attachment to the sclera, the conjunctival wound was closed by a suture, and both eyes were bandaged for two days.

The vision existing in the two eyes of the several cases at the time the treatment was begun varied from light perception in both eyes as the lowest to 15/200 in both eyes as the highest. The injections were made at intervals varying from one week to every second day, and in the cases in which both eyes were seriously affected the injection was made in one eye, and at the next visit in the fellow eye. If there was no improvement after the tenth injection the treatment was abandoned. The drug used in every case was a solution of sublimate, beginning with 1 to 5,000 and increasing the strength of the solution to 1 to 2,000. The first injection consisted of 10 minims, and the dose was gradually increased until 20 minims were injected, and this dose was never exceeded. Each injection of the sublimate was preceded by an injection of 5 minims of a 5 per cent. solution of cocain, and in this way the pain was reduced to a minimum, and never lasted more than 5 or 6 minutes, and was characterized by the patient as a burning sensation. After the injection the eye was not bandaged, but cold applications were made to the eye until the burning sensation subsided. In no case was the injection followed by any marked signs of irritation, and the swelling of the subconjunctival space rapidly subsided under the influence of the cold applications.

The temporary improvement in the vision in three of the cases lasted but a short time. In one case, a man, aged 46, the left eye was entirely blind, while the right eye V.=5/200. After the sixth subconjunctival injection and one intravaginal injection the vision rose to 15/70 and remained so for five weeks. It then slowly grew worse, and in three months from the date of the last injection it was reduced again to 5/200. In the second case of improvement, V.=15/200 in each eye. After the sixth subconjunctival injection and one intravaginal injection in the right eye the vision of the right eye rose to 15/50—the left eye remaining unchanged; but the improvement lasted only four weeks and then

---

1. Deutschmann's Beiträge, vol. xv, p. 41.
2. Arch. f. Aug., 1904, p. 232.

rapidly sunk to 15/200. In the third case of improved vision the right eye was entirely blind and the left eye could count fingers at three feet. After ten subconjunctival injections and one intravaginal injection in the left eye the vision of the left eye rose within a few hours from counting fingers to 15/70 and the field was perceptibly widened. This patient lived in Texas and returned home two weeks after the last injection. He reported that the improvement of vision lasted four months and then rapidly subsided, so that three weeks later it was reduced to perception of light.

CONCLUSIONS.

1. Posterior subconjunctival injections of sublimate may be given with but little pain if the sublimate injection is preceded by the injection of cocain.
2. The conjunctiva should be incised and carefully separated from the episcleral tissue, and the injection made far back toward the apex of the orbit.
3. The eye need not be bandaged after the injection, but cold applications should be made for half an hour.
4. This method of treatment of cases of atrophy of the optic nerve has, in my hands, proved of no more value than the usual routine treatment by mercury, potassium iodid and strychnia, and offers no encouragement for its continued use.

DISCUSSION.

Dr. S. D. Risley, Philadelphia, said that the result of Dr. Bull's persistent experiments are negative and congratulated Dr. Bull on having the courage to announce such a result. He said that this is commendable and that he wished other experimenters had the courage to do the same in the case of similar results. Viewed from the standpoint of physiology and from what we know of the physiologic methods by which subconjunctival salt injections act, the result, Dr. Risley said, was an *a priori* conclusion. He is an advocate of subconjunctival salt injections; he has seen them do a great deal of good in diseases of the anterior segment of the globe and has many times seen the entire uveal tract clear up under the action of repeated, prudently made, subconjunctival salt injections. He said that by that he did not mean solution of mercury, but the so-called physiologic saline solution. He has never, however, seen any good effect from the deep injection of this or any other solution. He called attention to a point made by Dr. Bull, that in making these deeper injections we must go outside the capsule of Tenon and not into it. When we consider the peculiar anatomic arrangement of the optic nerve, how Nature by means of the dural sheath of the nerve, the curious complex arrangement between it and the pial sheath, the intricate arrangement of the blood vessels and the peculiar arrangement of the lymph spaces of the eye, we see how little is to be expected from deep injections. Dr. Risley does not know how salt injections do good. He does not believe, for example, that the law of osmosis and endosmosis has very much to do with it. He first supposed that that was the way in which it did good. He stated in a paper presented before this Section last year that it was simply the dilatation of the lymph spaces, with a fluid of proper specific gravity, thus permitting a freer current, as it were, and emptying the corneal lymph spaces, which were again filled by normal processes. He believes that all the good we can ever hope to accomplish from these salt injections must be by this method through the anterior lymph spaces of the eye, and that deeper injections are simply useless or harmful. He used them at first very extensively in his endeavor to cure that hopeless condition, detachment of the retina, but without results. How many of us, he asked, have not witnessed, day by day, this chamber of darkness gradually close around these patients with optic nerve disease while we sat sad and helpless, and who of us will not commend any procedure that brings a ray of hope? It is like casting one's fly into a quiet, currentless and fishless pool, where, however skillfully done, there must be disappointment, but we must conclude to accept many clinical disappointments in our efforts.

Dr. A. A. Hubbell, Buffalo, stated that he had had some experience along this line, though not so systematically persisted in as by Dr. Bull. These lamentable cases, he said, deserve all the attention we can give and if there is the slightest hope held out by anyone we are all disposed to grasp it. Some years ago he began the use of the subconjunctival injections and among others he experimented with this disease. His experience, like that of Dr. Bull's, has been entirely negative. Dr. Hubbell rather expected such results from the fact that he believes that we must look further than the eye itself for the cause of the disease. He has not felt that it is necessary to adopt the surgical measures that Dr. Bull has done in giving the injections. Dr. Hubbell has endeavored to place the sublimate solution beneath the capsule of Tenon by grasping the episcleral tissues with the forceps and then passing the needle underneath the tissues held up. In that way he has succeeded in putting the solution well back. He thinks that these negative results are as valuable to the profession as results which are more favorable.

Dr. George de Schweinitz, Philadelphia, said that our judgment of the value of any therapeutic measure is always greatly enhanced when we have a carefully diagnosticated series of cases to deal with. He has had no experience in the treatment of these cases with this method and asked Dr. Bull whether he believes this method persisted in in the manner and according to the technic he has described is more efficient than the ordinary method of giving subconjunctival injections in other conditions. Dr. de Schweinitz has given many hundreds of subconjunctival injections with all suitable substances, and with most satisfactory results in various diseases of the uveal tract, the cornea and the sclera, but he is willing to follow Dr. Bull's technic if it is more efficient.

Dr. Charles S. Bull, New York, in reply to Dr. de Schweinitz, said that if any effects are to result from this method of treatment on the condition of the optic nerve, the injections must be made, not anteriorly, but posteriorly. He had made a great many injections as he supposed posteriorly by simply grasping the conjunctiva and thrusting the needle through as far back as he could. Whether he is less skillful than others he does not know, but in every one of those cases he caused a great deal of pain to begin with, and the tendency of those injections was for the fluid injected to drift toward the anterior segment of the eye, in the circumcorneal spaces. When he first thought of opening the conjunctiva with scissors and separating it carefully as far back sometimes as the entrance of the optic nerve he found that the injection showed no tendency to come toward the anterior segment, but remained posteriorly where he wanted it. He has not found that these injections posteriorly had any more efficiency in producing favorable results on these conditions than those made in the anterior portion of the conjunctiva.

NEOPLASMS OF THE COLON.

REPORT OF SIXTEEN CASES.*

A. F. JONAS, M.D.
OMAHA.

Neoplasms of the colon, when compared with abdominal growths in general, are not common, still they are of sufficient frequency that they can not be left out of consideration when the surgeon is confronted by tumors of moderate size in any region of the abdominal cavity. When we take into consideration the wide range of mobility possessed by the colon, we at once must recognize the fact that position or location can be no determining factor in the diagnosis. These growths may be fixed in a given locality, which may or may not be at the point of their origin and the normal locality of the organ bearing them. They may be very movable and occupy a position at a considerable distance from their initial stage by displacing the organ that harbors them. While these neoplasms are usually palpable, they may be concealed and can not be felt even after they have attained a considerable size and have brought about a complete intestinal occlusion.

---

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

While they usually begin as primary growths of the colon, they are not infrequently secondary and may have originated in the mesenterium or the appendix vermiformis of the uterus or its adnexa as will be seen from two cases detailed in this report. The primary growths may have developed so insiduously and pursued such a symptomless course as to be entirely unsuspected until by a hyperplastic inflammatory process they cause adhesions to the colon, having formed a vascular pseudomembrane between it and the neoplasm, the colonic wall rapidly becomes involved, gradually creating a narrowing of its lumen, with the frequent occurrence of sudden torsions and angulations, and occasionally when carcinomatous ulcerations extend into the outer intestinal tunic, the production of perforation ushering in a fatal peritonitis.

We must confess that physical signs alone are not sufficient to warrant a diagnosis. The history is of first importance and particularly a knowledge regarding certain functions.

PATHOLOGY.

Neoplasms of the colon present several varieties and in a general way we may designate, from a pathologic standpoint, two groups, viz., benign and malignant. In the first group we naturally place such connective tissue tumors as intestinal fibroma, lipoma, myxoma, and polypoids which appear as small nodular growths or as pendulous polyps. The latter occasionally produce intestinal obstruction and sometimes invagination. Myoma and multiple cysts have been met with.

Sarcoma of the intestine is extremely rare. Occasionally the solitary follicles of Peyer's patches may be at the seat of lymphadenoma or lymphosarcomatous enlargement, especially associated with leukemia or pseudoleukemia.

As an independent primary affection, round-celled sarcoma may spring from the submucosa and the deeper layers of the mucosa, sometimes extending to the mesentery. The mucosa and submucosa sometimes contains secondary sarcomatous nodules in considerable numbers and the peritoneal covering may be thickly infiltrated with miliary sarcoma points.

The malignant tumors of the intestine are chiefly of epithelial origin and under this caption must be counted not only carcinoma in all its varieties, but adenoma and inflammatory papilloma.

Chronic inflammations of the large intestine that result in inflammatory hyperplasia of the mucous membrane, sometimes terminate in papillomatous and polypoid formation of considerable extent.

While we can draw no sharp line between adenoma proper and inflammatory proliferations, the former, more strictly speaking, are tumors.

Adenomata may occur in the form of papillomatous cauliflower-like formations; or they may be found in the form of flat elevations of uneven surface and are prone to ulceration and hemorrhage.

Adenomata sometimes arise in the crypts of Lieberkühn in the duodenum of Müller's glands by an hyperplasia and in their makeup present typical glandular acini, a basement membrane containing cylindrical epithelium lining the tubules.

Adenomata are found sometimes in the colon, but more frequently in the rectum and rarely in the duodenum. Carcinoma is the tumor found most frequently in the intestine. It is observed most often in the colon and at the ileocecal juncture, at the flexures of the colon and least frequently in its descending portion. It is found sometimes in the duodenum, especially at the papilla of the common duct. More frequent than in all other parts of the intestine carcinoma is met with in the rectum.

Sutton collected 100 cases of carcinoma of the intestine. Of these 75 were located in the rectum, 23 in the colon and only 2 in the small intestine.

The collective reports of tables of autopsies published by Azeman, Maydl, Müller and Nothnagel, show an aggregate of 69,083 autopsies, of these 5,796 deaths were from carcinoma in general, about 84 per cent. Of the 5,796 deaths from carcinoma, 1.296 were in the intestinal canal, making 22.35 per cent. of all carcinomata. Thirty-five of these occurred in the duodenum and small intestine (2.7 per cent); 35 were in the cecum (2.7 per cent.); 131 in different parts of the colon (10.11 per cent.); three in the vermiform appendix (23 per cent.); 83 in the sigmoid (6.405 per cent.); 262 in the rectum (20.25 per cent.) (Hemmeter). It will thus be seen that 19.422 per cent. of all intestinal cancer occur in the large intestine if we include the sigmoid, nearly 80 per cent. of these occurring in the rectum.

Carcinoma of the colon presents an irregularly formed mass, containing hard and soft areas, often ulcerated especially within the intestinal lumen, which bleeds easily and projects into the gut, reducing its diameter and interfering with the fecal passage, or when the growth is girdle-shaped and surrounds the gut, which is its most characteristic form, its lumen is narrowed, interfering with fecal circulation. As the intestinal constriction becomes greater the colon above the point of stricture becomes greatly distended by the accumulating gases and fecal masses. The bowel below the obstruction becomes thinner and its lumen contracted. The distension may become so great as to produce rupture.

Carcinomata of the colon are, chiefly, cylindrical epitheliomata of glandular cancers, being made up of atypical acini and tubules, epithelial cells in masses which have irregularly proliferated and infiltrated the neighboring tissues. Occasionally these neoplasms have been found a clear transition of adenoma into carcinoma (adenocarcinoma). Thus transformation is not uncommon in tumors of the bowel.

Cancer of the large intestine is usually of primary origin, but rarely is it secondary, and when so it has spread to the intestine by contiguity from the omentum, stomach, uterus, ovary, bladder, prostate glands, vermiform appendix and lymphatic glands, or cellular elements may be transferred from other distant organs wherein a primary carcinoma may be undergoing disintegration.

Carcinoma of the intestine and particularly of the colon, occurs chiefly between the ages of 40 and 60 years, although these growths are sometimes observed earlier. Nothnagel records a case of carcinoma of the cecum in a boy 12 years of age; Schönig two cases of rectal carcinoma in girls of 17 years of age; and Clar reported a case of medullary carcinoma in a boy three years old (Hemmeter). Maydl has shown by material of the

Allgemeines Krankenhaus, in Vienna, that one-sixth of all intestinal cancers occur between the ages of 30 and 40 years and one-seventh occur before the thirtieth year, consequently it is not safe to exclude cases from a diagnosis of intestinal cancer on account of age.

Adhesions between the neoplasm and all organs may give rise to great misplacement of viscera creating great operative difficulties. Sometimes many loops of intestine have become adherent to each other as well as to the neoplasm and all of these to the bladder, uterus, ovaries, and omentum, creating an entanglement that is impossible to disentagle. Adhesions may create fistulæ between colon and intestine or bladder, occasionally perforations externally through the skin have been observed. A primary neoplasm may become so large as to occlude the intestine; in many instances such a growth may disintegrate, a portion of it slough away and the obstruction is relieved, to be followed by a constriction due to connective tissue formed in the place of the disintegrated portions. During a partial disintegration of such a growth, blood vessels become eroded and severe loss of blood may ensue. If the disintegration process extends to and through the peritoneum before agglutinative adhesions with adjacent parts have taken place, a fatal peritonitis follows.

SYMPTOMATOLOGY.

There is no disease of the intestine that in its early stages is usually so free from symptoms. It develops so slowly that its presence is unsuspected until more or less grave complications are manifest. Every practitioner can detail cases that have progressed to a point where a fatal termination was imminent from sudden bowel obstruction and yet no tumor was palpable because of its concealment under the left costal arch as in one of our cases. Others have been recorded and observed many times, where gradual emaciation, a cachexia and a gradually increasing constipation was the only warning. Again others with an unimpaired appetite and digestion, no loss in weight and the only manifestation the obstinate and aggravated bowel inactivity that gave cause for alarm.

The common early subjective indications are frequently recurring colic-like pains with circumscribed tenderness, unpleasant abdominal fullness due to accumulation of gas, with bowel inactivity alternated sometimes with diarrhea. These symptoms were present in nearly all of our cases. Particularly, the cramp-like pains that increased in severity and frequency until either a tumor could be palpated or bowel obstruction was complete. These colicky pains were more or less associated with abdominal fullness, tension and a point of tenderness.

The digestive functions were unimpaired, as one would expect in growths situated so low down in the intestinal tract, as the colon plays no important part in digestion or assimilation. These symptoms are not pathognomonic of malignancy nor do they indicate the presence of a tumor in any form. They seem to indicate that a more or less localized lesion exists which may be inflammatory or neoplastic. There is no justification for an absolute diagnosis of neoplasms of the colon, whether with or without the above symptoms, unless we can feel a tumor that seems to have no connection with other organs. The evidence becomes strong when gurgling of gas through the tumor is heard. The diagnosis becomes more certain when an obstinate and increasing constipation exists and it is usually quite certain when in the presence of a hard irregularly-shaped tender tumor, a bowel obstruction exists. The author has found in several of his cases a strong confirming evidence to the use of the stethoscope, frequently on auscultation a gurgling of air through that portion of the intestine in which the growth was located, could be heard. Another valuable aid consisted in air being pumped into the rectum through a long tube. The little jets of air could be heard through the stethoscope up to the point of partial or complete obstruction but not beyond.

In several of the cases when the bowel had become partially obstructed, the fecal column was flattened, compressed, stringly and spirally molded, sometimes the stool was dry and globular. But these signs can not be considered of much importance because a constricted sphincter ani might, in a measure, cause unusual forms of the feces. The stool, however, is often very offensive, owing to the disintegration of the neoplasm. The evacuations then may contain pus, mucous and blood in varying quantity, the hemorrhage being sometimes dangerously profuse. Care should, however, be exercised to ascertain if hemorrhoids in any form are existent. Occasionally particles of the growth are found in the evacuations, but usually escape detection. It is well, however, to examine the stools critically for such broken-off particles.

It is remarkable how long some of these cases can exist even after obstruction is complete. One of our cases was seen three weeks after the last evacuation. The colon is susceptible of great enlargement, sometimes being so large that on first inspection after opening the abdomen, one is uncertain whether or not he is dealing with the stomach. The enormously dilated colon can accommodate an immense quantity of firm stool, the fluids having been reabsorbed.

DIAGNOSIS.

It is very important that frequently repeated palpation of the abdomen in suspected intestinal neoplasms be done in various positions, sometimes under an anesthetic. Rectal and vaginal explorations are important because the neoplasm may of its own weight have sunk into the pelvis or have been drawn out of place by adhesions. It must be remembered that neoplasms of the colon, in their early development, are apt to be round or oval, smooth and not very large, not large enough to cause the abdominal wall to project. Later they become uneven and irregular in shape and sensitive. If located in the transverse colon a distinct aortic impulse is present. Growths of the ascending transverse and descending colon, if palpable at all, are usually freely movable and are located below the umbilical line. Owing to the varying amount of intestinal gas from day to day the tumor may be felt at one examination and elude detection in subsequent examinations, hence the necessity of frequent investigations. Percussion is not of much value. Fecal impactions not uncommon, may be so confusing as to make a diagnosis difficult and sometimes impossible.

The peristaltic wave is important; in some of our cases it was so distinct that the distended intestinal coils could be plainly seen and in two instances we obtained most excellent photographs. So frequently was this condition observed, that when present, it was regarded an important sign of probable bowel obstruction and taken together with several of the aforesaid symptoms was regarded as a reliable diagnostic factor.

Case 1.—*Primary. Endocarcinoma. Located in Sigmoid. Removed. Ends closed-lateral anastomosis. Needle and Thread. Recurrence in five months.*

History.—Mrs. S. P., aged 42, had four children. Menses were always regular until last six months when they became more profuse but not excessive. No leucorrhea. She always enjoyed good health, bowels always regular until six months ago, when an occasional cathartic became necessary. Constipation increased so that repeated daily efforts with cathartics and enemata would after three to four days produce an evacuation and finally all efforts were unavailing.

Examination.—On admission uterus was only moderately movable, very tender and to it seemed to adhere a soft doughy mass whose outlines were difficult to fix in an upward direction. Its lower border seemed fairly well circumscribed. It seemed to fill the iliac fossa. There was much very severe abdominal pain. No discernible peristaltic wave but much gurgling of gas.

Operation.—The upper end of the sigmoid was found adherent to the uterus and that portion of the gut above the point of adhesion filled with a large mass of feces and gas. This proved to be the tumor that was palpable before the operation. The gut was separated but the adhesion surface was suspicious of malignancy. The gut above and below the point of constriction was clamped and the mass removed. The distal and proximal gut ends differed so greatly in diameter, owing to the distended central end, that an end-to-end anastomosis was deemed inadvisable, consequently both ends were closed by purse string suture, and a lateral approximation done with needle and thread. The growth proved to be an adenocarcinoma.

Case 2.—*Secondary. Papillomatous ovarian. Descending colon. Removed end-to-end. Czerny-Halstead Suture. Double suspension suture from recurrence. Free after one year. Lost from sight.*

History.—Mrs. M. M. A., age 44, has always been constipated since girlhood. Has taken all forms of cathartic and in large doses. Has had three children, menstruates regularly with little pain. Since four months she has had severe griping pains of more or less intensity sometimes requiring anodynes. She complained of frequent and annoying rumbling in her bowels, especially during attacks of pain. She has lost no flesh, appetite and digestion normal. It became more difficult to procure bowel evacuation until finally all efforts failed.

Examination.—On admission I find her in good condition. Abdomen moderately tympanitic, slightly tender over every portion except in left iliac fossa where pain is severe on pressure. Bimannal examination discloses an enlarged slightly tender uterus, in left parametrium a movable, tender, orange-sized mass. It is believed that there may be a bowel adhesion to this mass. Operation advised and accepted.

Operation.—Median incision. Mass in left side proved to be an ovarian papilloma to which is adherent the lower end of the descending colon, in fact, the colon seemed to be incorporated into the papillomatous mass. The growth is ligated at its base and separated from its uterine attachment. The gut is doubly clamped above and below the neoplasm and removed. The bowel is joined by an end-to-end anastomosis by a continuous Czerny suture and two rows of Halstead sutures. Nature of growth, secondary papilloma.

Case 3.—*Primary. Adenocarcinoma. Located in upper end descending colon. 1. Short circuit, Murphy button. 2. Growth removed, ileo-colostomy. End to side. Recurrence in twelve months. Death in eighteen months.*

History.—Mr. L. S., age 60, mechanic, American, complains of much abdominal pain of a cramp-like character often vomits and has obstinate constipation. He states that his illness began four weeks ago with severe griping pain and more or less constant desire to move the bowels but he was usually unsuccessful. Purgatives sometimes produced evacuations but always associated with severe pain. These symptoms have become progressively worse until the date of our first examination.

Examination.—Temperature normal. Pulse, 120. Respiration, 40. General abdominal tenderness most severe near the left costal margin, but no tumor could be made out, chiefly on account of the tenderness. An operation was advised chiefly on account of the apparent bowel obstruction.

Operation.—Through a median incision extending above the navel a mass could be felt in the upper portion of the descending colon. It was hard and firm, moderately movable. The condition of the patient was so unfavorable that an immediate removal of the growth was deemed advisable; consequently a lateral anastomosis was established between the transverse and the descending colon with a large Murphy button. The button holding perfectly, the abdominal wound was closed. The patient recovered quickly from the anesthesia and in an hour passed a large amount of flatus, and on the second day with the aid of a small enema a large bowel movement occurred. The button passed on the twelfth day. The general strength returned rapidly so that on the twentieth day after the first operation a second one was done for the purpose of removing the neoplasm. Through a high incision in the left semilunar line the growth was exposed. It was first detached from its mesenterial attachments. Two long hemostatic clamps above and below the tumor were applied and the gut between the two clamps resected. The intestinal ends were inverted and closed. The anastomosis opening from the first operation seemed perfect. The abdomen was closed without drainage. Nature of growth adenocarcinoma.

Case 4. — *Primary. Adenocarcinoma (ileocolostomy). Located in ileocecum. 1. Artificial anus from ileum. 2. Lateral approx. Needle and thread. Well six months later, not heard from since.*

History.—Mrs. T. R., aged 50, had good health until 18 months ago, when she experienced colicky abdominal pains, particularly in the right hypochondrium, sometimes associated with vomiting. Bowels fairly regular. No blood in the stools. Her weight gradually diminished. The abdominal pains became more frequent and more severe.

Examination.—Present state. Abdomen moderately distended. Manipulation caused visible peristaltic waves, especially in the right iliac fossa. In this region could be felt a fist-sized elastic tumor. Gas could be heard to pass through it, probably through the ileocecal valve. Bowel passages were obtained only by artificial aid.

The diagnosis was bowel obstruction in all probability due to a malignant neoplasm. The loss of flesh and cachexia associated with a palpable neoplasm seemed to warrant this conclusion. The pain and vomiting increased, the obstructive symptoms and the great prostration seemed to indicate an immediate interference. An operation was accordingly advised and promptly accepted.

Operation.—Chloroform. A section in the median line revealed a mass of distended intestines. Exploration was unsatisfactory. The neoplasm in the right iliac fossa could be felt but not accurately outlined. The patient appeared extremely exhausted, haste seemed imperative, consequently a loop of ileum was drawn out of the wound and carefully surrounded by gauze swabs, an incision into the ileum was made, permitting the escape of a large amount of flatus and fecal matter. The intestinal opening was closed and the loop of ileum was fastened to the abdominal wall for the purpose of making an artificial anus according to Maydl. The loop of ileum opened 36 hours later and a large amount of flatus and fecal matter was evacuated. The abdomen became flat in twenty-four hours. The general condition of the patient improved very rapidly and she gained in weight and strength rapidly. In two weeks the patient was up and about her home. Three weeks from the date of her operation a second operation was made to restore the continuity of the intestinal canal.

Second Operation.—Incision through the linea semilunaris revealed an orange-sized growth involving the ileocecal junction almost closing the ileocecal valve. The loop of ileum, which was attached to the abdominal wall, proved to be afferent iliac limb of the loop making the artificial anus. This loop together with the cecal tumor was removed, and the afferent limb of the artificial anus was closed. The closed end of the ileum was placed against the closed colon and a lateral anastomosis made with needle and thread. Further exploration of the abdominal cavity revealed no other pathology, consequently the abdomen was sutured. The opening that had been occupied by the artificial anus was then closed. Recovery was uneventful. Nature of growth of adenocarcinoma.

Case 5.—*Primary. Adenocarcinoma. Located in ascending colon. Hepatic flexure. Excision, ends closed, lateral approx. Murphy button. Well two years later.*

History.—Mr. H. A., laborer, aged 38. There was vomiting of especial moment in the early history. The present illness began nearly two years ago with occasional griping pains in the abdomen. These were believed to be due to gastric disturbances. After an unusual exertion some six months ago, followed by an unusual amount of pain in the abdomen, he observed for the first time a lump in the right side. He had for a considerable period been very much constipated. There had been a gradual loss in weight and he became gradually pale and weak.

Examination.—Status Præsens. Patient of medium height, well built, very pale. The abdomen symmetrical, shows a distinct fullness in the right flank. A distinct irregularly rounded mass can be palpated in the right hypochondriac and right lumbar regions, which can be moved upward and downward and laterally almost to the median line. The lower border is three fingers breadth below the transverse navel line. It appears to have no connections with the liver. The mass can be pushed almost into the renal fossa. It is only slightly tender. No tender points in any other part of the abdomen. Leucocyte count, 20,000, Hemoglobin, 45 per cent., red corpuscles, 4,000,000. urine clear, sp. gr. 1.020, alb., 0, sugar, 0. No renal elements microscopically. Temperature and pulse normal. The mobility, size and location of the tumor suggested a renal origin. The absence of all microscopic elements in the urine indicated an extra renal origin. A constantly increasing and stubborn constipation seemed to indicate an intestinal origin. The opinion is strengthened by the statement of the patient that he can feel a bubbling of gas toward and away from the tumor. He states that he can distinctly feel gas moving toward the mass where it seems to be arrested for a few seconds and then it passes beyond and away from it. The passage of gas can sometimes be felt with the palpating hand. The stenoscopic examination plainly indicated the passing of gas through the growth. Percussion gave a flat tympany.

Examination of stomach contents one hour after an Ewald's test breakfast, gave the following. Acid reaction, odor sour, distinct red color with phloro-glucin-vanillin solution. Inflation indicated normal position and size of the stomach; the growth was in no way affected. Tapping the abdominal walls with the finger tips started peristaltic waves which could be plainly seen passing across the upper part of the abdomen from left to right, at the same time bubbles of gas could be felt with the hand and heard through the stethoscope, passing through the tumor.

From the above findings it was believed that tumor of renal origin could be excluded. The test-meal investigation was negative as to stomach or pyloric involvement. There appeared to be no origin in the liver on account of tumor movements independent of the liver. Clearly we had to do with an intestinal neoplasm; its mobility, the passage of gas through it, the arrest of the peristaltic wave by it, together with the obstinate and increasing constipation indicated its presence. Its location suggested the hepatic flexure and transverse colon as its seat. An operation was advised and eagerly agreed to by the patient.

Operation.—Incision through right linea semilunaris reveals a mass involving one-half of the ascending and hepatic colonic flexure, which can be lifted into the wound. Mass is excised between clamps, two above and two below the growth. The ends of the colon are closed and a lateral approximation with a Murphy button is made. The abdomen is closed without drainage. Recovery uneventful. Nature of growth adenocarcinoma.

Case 6.—*Secondary. Cicatricial mass. Located in descending colon from uterus and tube. Removed end-to-end suture. Double supporting loop. Lost sight of after two months.*

History.—Mrs. J. A. S., aged 42, American, has had three children, last one five years old. One year ago began having colicky pains at intervals. Bowels had always been regular. began to be irregular requiring an occasional cathartic until three months ago, constipation began to get progressively worse, requiring cathartics in increasing doses and frequency until within the week preceding admission large doses of cathartics and enemata were only slightly successful. She had observed a profuse menstrual flow and occasional uterine hemorrhage in excretion.

Present State.—Apparently in good health, quite fleshy. Has lost no noticeable weight. Examination discloses an enlarged and tender uterus in normal position. Palpation produces slight uterine hemorrhage. In the left parametrium can be felt a moderately movable hen's-egg-sized swelling which was believed to originate in the left ovary or tube and probably had become adherent to the rectum causing the constipation.

Operation.—Abdominal section disclosed an enlarged uterus irregular, slightly nodular fundus. The descending colon was prolapsed and its lower end firmly adherent to the posterior and left side of the uterus, together with an old pyosalpinx. The sigmoid was crowded down into the cul-de-sac forming several reverse coils. The adherent coil was separated with the scissors and packed with gauze swabs and pushed aside. The uterus and adnexa were removed in toto. Then the adherent portion of the bowel, which was a cicatricial mass was excised and an end-to-end enterostomy was done using the double loop supporting ligature. Nature of constriction cicatricial.

Case 7.—*Primary. Adenocarcinoma. Located in ileocecal region. Ileum planted into the side of colon. Murphy button. Lost sight of four months later.*

History.—Mrs. H. S., age 51, housewife. Her present illness began six months ago with constipation, which had increased so that her bowels moved only every three to five days and then only after repeated artificial aid, usually evacuating hard and lumpy feces. These periods of obstinate constipation have several times yielded to looseness, the stools being yellow and slimy, but containing no blood, nor did she complain of teneseness. Several weeks ago, she vomited a sour material, but no blood. She has lost much in weight. Exertion causes shortness of breath; recently her feet became swollen. Constipation was present but could be relieved.

Examination.—Although the patient appears somewhat pale, she is well nourished; normal temperature, slightly coated tongue. Abdomen somewhat distended. In the ileocecal region is a distinct elevation that is not affected by the respiratory movements nor by position. On palpation can be felt a goose-egg sized rounded nodular mass about midway between the anterior superior spinous process and the umbilicus. It can be felt immediately beneath the abdominal wall, not tender, very hard. It is freely movable and can easily be crowded under the navel. With a stethescope occasional bubbles of gas can be heard to pass toward it, which are arrested for an instant and then pass on. A flat tympany can be elicited on light percussion. No peristaltic waves. The tumor could be pushed upward almost to the liver but not to it nor into the renal fossa, neither could it be made to descend into the pelvis. Test meal was negative as to stomach disease. Urinary analysis revealed no pathologic conditions.

The clinical evidence indicated an intestinal growth, probably ileocecal, but that was not certain.

Operation.—An incision through the linea semilunaris revealed a tumor involving the entire head and circumference of the cecum and the lower wall of the ileum. The mass was easily removed together with about three inches of the ascending colon and about two inches of the ileum. The open end of the colon was closed with a Czerny-Lembert suture. The end of the ileum was implanted into the inner side of and about one and one-half inches above the closed end of the ascending colon, by means of a Murphy button. Patient died on fourth day from perforation at site of anastomosis. The growth proved to be an adenocarcinoma.

Case 8.—*Primary. Neoplasm located in lower end of descending colon. Relieved by short circuit with Murphy button. Died in three months.*

History.—Mr. W., age 58, about six months before admission. was struck on the left lower quadrant of the abdomen. He continued his work during the day but after retiring he had nausea and vomiting, and abdominal pain. The left iliac pain has continued since the accident. often worse at night ference is deferred until the clinical signs are positive, i. e., when bowel obstruction is complete and a tumor can be felt, then metastatic deposits have become so extensive that we can scarcely hope to eradicate all the pathologic structures. It is true we still can very often remove the principal growth, restore the continuity of the bowel lumen and achieve an operative recovery, but in the light of the present status of bowel surgery, we must expect an all too great recurrence percentage. Surgeons have dreaded to enter the abdomen when the clinical signs were doubtful. So did they, not so very long age, where the bile tracts of the appendix were involved, chiefly because they had not become familiar with definite and well defined diagnostic signs and on the other hand on account of the uncertain technic in dealing with these organs. The same holds true of neoplastic intestinal obstruction. Sometimes the signs are absolute and yet it is with dread that most surgeons attack these cases. An intestinal neoplasm usually involves a resection.

The principles involved in such a procedure are well defined, but the details of such an operation are countless. No two operators accomplishing the same result employ the same methods. I am sure that this unsettled operative condition is responsible for much procrastination. It will be seen from the cases here detailed that a variety of methods of bowel union were used. Without going into a discussion of the respective merits of the various methods, it may be briefly stated that from the experience gained from our cases of neoplasms of the large intestine as well as bowel obstruction due to inflammatory and mechanical causes, two principal procedures for the restoration to the continuity of the bowel have commended themselves as easy and rapid of accomplishment, viz.: First, in cases where the resected ends were not entirely free from inflammatory conditions, a closure of both ends of the bowel with purse string and Lembert sutures, after the removal of the neoplasm, and a lateral approximation near the ends and the establishment of an anastomosis with suture aided by the Moynihan clamps; and, second, after the removal of the neoplasm and the bowel was otherwise sound, an end-to-end union with a Connell and Cushing suture aided by the double loop suspension ligature were found most practical and easy of application. The merits of these methods will be the subject of another communication at another time and place.

THE SURGICAL CONCEPTION OF SIGMOID PATHOLOGY.*

H. D. NILES, M.D.
SALT LAKE CITY, UTAH.

In the evolution of intraperitoneal surgery, our progress has invariably been from a resultant or terminal pathology to the antecedent or original pathology; from the well-advanced and easily discovered lesions to the earlier and more obscure departures from normal. Gradually, step by step, as our knowledge has widened by experience and study, we have learned that large pelvic abscesses have small beginnings in an infected tube or endometrium; that cancer of the gall bladder or stone in the ducts means a previous infection of the parts; that malignant disease of the rectum, stomach or uterus is usually preceded by benign localized inflammatory or necrotic lesions, and we have learned to take into thoughtful account the physiologic and anatomic peculiarities of these different regions in connection with their etiologic bearing on pathologic conditions, and, lastly, as better results followed timely surgery, we have won the confidence and co-operation of our colleagues, the internists, without which many victims of intraperitoneal pathology must still have suffered or died, with their malady unrecognized, untreated or mistreated. So it has been in other parts of the abdomen, and so we have reason to hope it will be in sigmoid disease.

MORTALITY.

So long as our surgical endeavors are limited to advanced malignant disease and acute obstruction from volvulus, we can not reasonably hope to reduce the present high mortality that attends sigmoid operations. So soon as we learn to recognize, trace and interpret the successive morbid processes, that unchecked lead up to dangerous terminal pathology, we may confidently expect to realize the full benefits of timely and preventive surgery here as in other parts of the body.

In spite of the absence or scarcity of statistical operating-room and postmortem evidence, there are good reasons for believing that the sigmoid must often be the site of important pathologic processes deserving surgical consideration, of which only the small proportion that terminate in cancer or complete obstruction of the bowels are usually recognized.

ANATOMIC CONDITIONS.

No one familiar with the surgical anatomy of the sigmoid can fail to be impressed with the existence of conditions that must render this part of the alimentary canal especially susceptible to disease and accident. It is a constricted irregularly tortuous portion of the large intestine, firmly attached at either extremity by a comparatively short mesentery, the middle portion freely movable, being connected by a long mesosigmoid, and would seem to present every opportunity for the occurrence of twists and angulations (Fig. 3).

A sagging descending colon, with its loose attachment, favors angulation at the upper extremity of the sigmoid, while angulation of the lower extremity can easily occur when the middle portion falls over the more closely attached distal end of the sigmoid. Under the head of volvulus, only those distortions are described as are seen more or less imperfectly in operations, but experimentally various other twists and angulations may be produced in a way to obstruct the bowels partially or completely.[1]

It is highly probable that partial obstructions of the large intestine, malignant and benign, occur at this point much oftener than is generally believed; for unless the obstructive symptoms are urgent these cases rarely come under the observation of the surgeon and in most instances escape recognition. In the light furnished by experiments on the cadaver and recent clinical observations, I feel sure that I have in the past treated the vast majority of these cases symptomatically with no conception of the real causes of the symptoms, and doubtless others have often made the same error.

In no part of the gastrointestinal canal are the anatomic conditions so favorable for the development of ulcer. Hardened fecal matter passing from a large straight canal through a smaller tortuous one, frequent temporary angulations, with the occasional sagging of one part over another, are markedly irritating factors, all favoring localized inflammatory and necrotic lesions. Long-continued pressure of fecal accumulations on the intestinal wall, by interference with the circulation, may induce local necrosis; any twists or compression of the mesosigmoid may produce the same result by interrupting the blood supply, and these last-mentioned causative factors of ulcer must often be operative in this region.

---

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Volvulus is permitted by a long mesocolon, but the direct cause must be either trauma, or more frequently mechanical obstruction at the distal end, sufficient to distend and displace the middle portion of the sigmoid.

PATHOLOGY AND LOCATION OF LESIONS

Ulcer and angulation are doubtless often associated, with the former as the usual primary causative factor. In two of my operations I found the bowel angulated at the juncture of the descending colon with the proximal extremity of the sigmoid, and an ulcer at the angle, which gave way when I attempted to restore the parts to their normal position (Fig. 1). It is easy to understand how most permanent angulations or twists of the sigmoid are preceded or followed by an open or cicatrized ulcer and how recurring angulations or twists might be more likely to occur about the contracting scar of an old ulcer.

On the other hand, it is true that pus collections can not often occur in sigmoid pathology, for, unlike the infected Fallopian tube, appendix and bile ducts, where drainage is imperfect or impossible, the anatomy of the sigmoid permits good drainage from the mucosa, which is the usual site of infection. A perforating ulcer, however, might result in abscess here, as it often does in the stomach ulcer.

It is a remarkable fact that not less than 87 per cent. of all cancers of the gastrointestinal tract are situated in the narrow strictured parts of the canal, the sigmoid standing third in point of frequency. It surely can not be chance or the operation of any general cause that so distinctly marks these parts as the favored sites of malignant disease. This overwhelming predominance of cancer in certain regions can only be due to a local cause; and, so far as can be determined, that local cause is chronic ulcer, or its cicatrix. It can not matter whether that ulcer is produced by hyperacidity of the gastric juice, stagnation of the bowel contents, abnormalities of the sphincters, or the irritation or pressure of hardened feces on the intestinal wall, so long as we know that ulcer is essential to the development of cancer and the prevalence of cancer indicates the relative frequency of ulcer.

But since recent studies in stomach pathology go to show that only a small proportion of gastric ulcers terminate in cancer, and that a large majority of these ulcers either cicatrize spontaneously or remain open indefinitely, it is apparent that ulcer is far more frequent than cancer, and, as this doubtless holds as true of the sigmoid as of the pylorus, we may assume that ulcer of the sigmoid is of very common occurrence.[2]

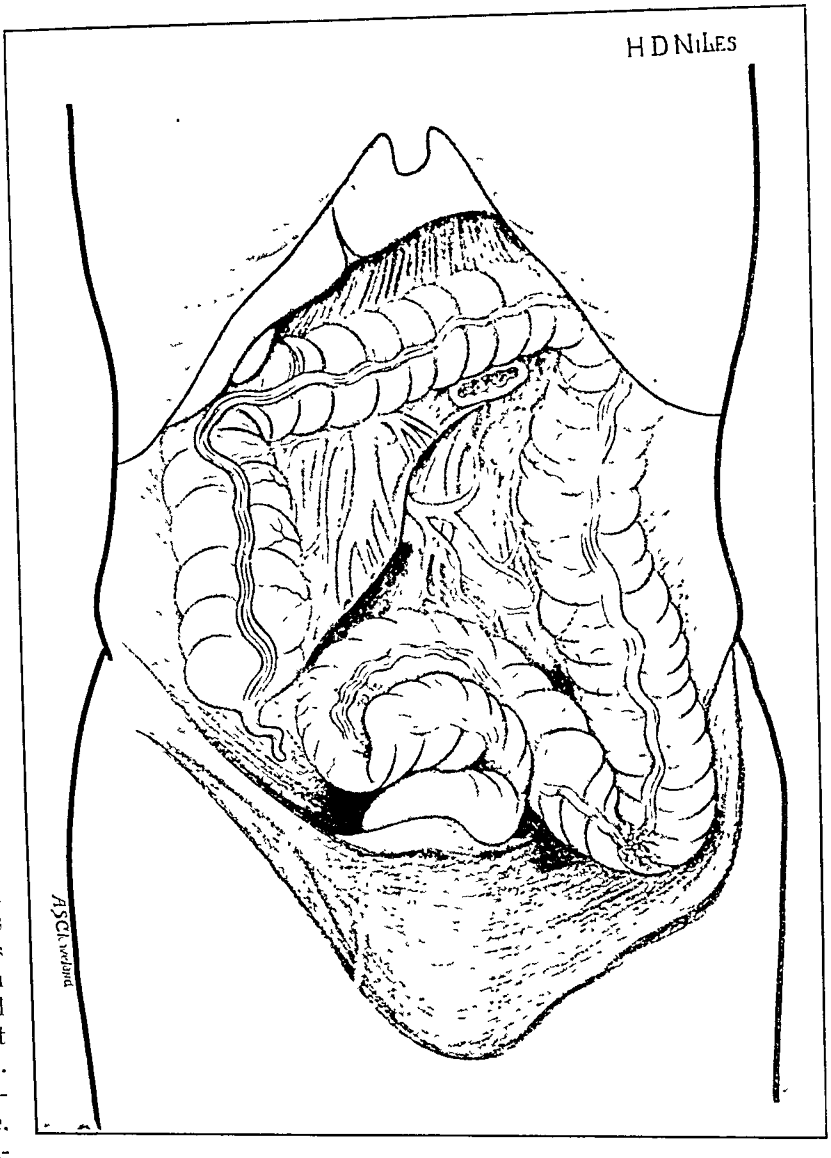


Fig. 1.—Showing commencing ulcer and angulation at proximal and distal ends of sigmoid.

Incomplete, non-malignant stricture, with or without a twist or angulation of the bowel, probably ranks next to ulcer in point of frequency and in time of occurrence. This belief is based on: First, the known tendency of intestinal ulcer to produce cicatricial stricture; second, the ease with which stenosis can be produced by twisting or angulating the sigmoid in the cadaver; third, the history of gradual occlusion elicited from a good proportion of the patients operated on for complete obstruction; fourth, the marked symptoms of stenosis of the sigmoid observed in a number of patients not operated on; fifth, the assumption that any contracting ulcer, perhaps insufficient to produce occlusion itself, might favor angulation with resulting obstructive symptoms. I have several patients under observation who present to my mind convincing evidence of chronic incomplete stricture or stenosis of the sigmoid. and at least three of my non-malignant cases, in which the patients were operated on for complete obstruction, gave a distinct history of gradual occlusion extending over a period of several months. The apparent slow development of sigmoid cancer noted by most careful observers should, I am sure, be interpreted as an evidence of a precancerous pathology rather than a deviation from the general law that the progress of malignant disease is essentially rapid.

---

[2] A good proportion of our office patients complaining of chronic obscure abdominal symptoms should be examined for sigmoid ulcer.

In the fewest possible words I have attempted to show, first, how ulcer must of necessity be the usual primary lesion resulting from the anatomic and physiologic peculiarities of the sigmoid; second, that cancer here, as in the stomach, is preceded by ulcer; third, that ulcer is always the causative factor in annular stricture; fourth, that it is the most influential factor in sigmoid angulation and one of the predisposing causes of accidental volvulus; fifth, that, as a consequence, it is the important antecedent pathology of all malignant and most non-malignant, complete and incomplete occlusions of the sigmoid.

It must be admitted that the present available statistical, operating-room and postmortem evidence is not alone sufficient to prove these statements, but in a careful study of my own cases and those of thirty well-known American surgeons with whom I have been in correspondence I had hoped to include an analysis of these clinical statistics, but space will not permit.

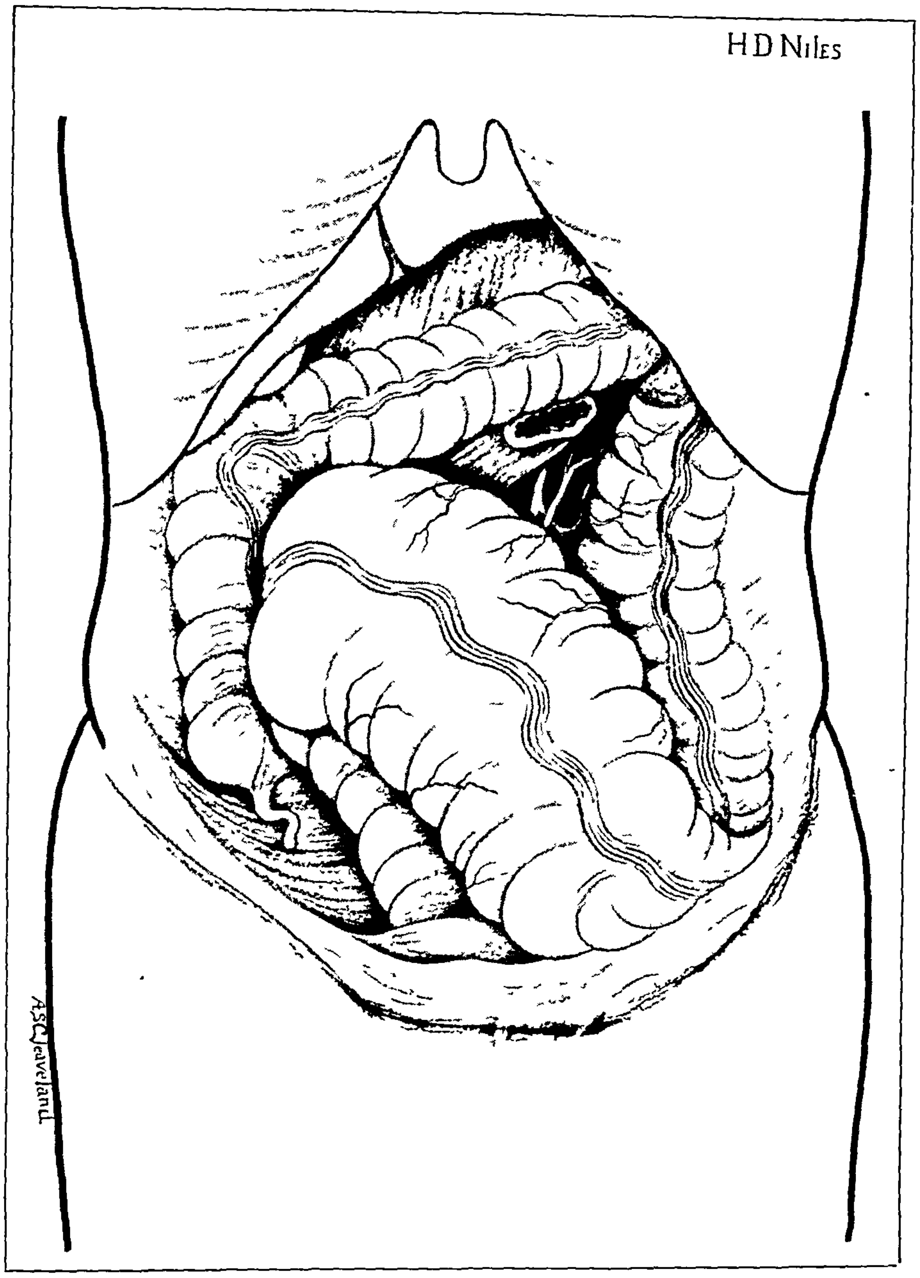


Fig. 2.—Stricture of proximal extremity of sigmoid, showing enormously distended sigmoid after inflation.

The chief (and I think sufficient) support of these conclusions comes from the following facts: First, our knowledge of the surgical anatomy of the sigmoid, gleaned from studies and experiments on the cadaver; second, the relations between ulcer and cancer and ulcer and pyloric stenosis as taught by recent observations made during operations on the stomach; third, the known relative frequency of sigmoid cancer and the occasional occurrence of acute obstruction of non-malignant origin; fourth, the fact that every variety of ulcer, even typhoid, has frequently been found in this region; fifth, the fact that ulcer is the only lesion that could be the common result of the anatomic peculiarities and at the same time the common cause of the terminal pathology of the sigmoid.

If my reasoning is sound and my conclusions are true, or even approximately true, the early recognition and rational treatment of sigmoid ulcer and its complications are worthy of the most careful consideration of both internists and surgeons. The limits of this paper will not permit me to dwell on the symptomatology of sigmoid ulcer, but those who realize the frequency of ulcer in this region and the distress and danger that may ultimately result from ulcer will not measure the gravity of the lesion by the mild symptoms that characterize its early stages. A suggestive history, the exclusion of other diseases, the absence of acute inflammatory symptoms, the left-sided tenderness, either with or without inflation of the bowel, the distension of the colon, the colicky pains, the presence of pus or blood in the stools, obstinate constipation or obstructive symptoms, are all indicative of sigmoid pathology.

METHOD OF EXAMINING THE SIGMOID.

There is one method of examining the sigmoid that I think deserves special mention. Inspection, palpation and percussion before, during and after inflation of the bowel with air or distension with water may be of the greatest value in determining whether or not the lumen is narrowed by stricture, angulation or distortion, and in this way we may even determine the degree and location of any stenosis. Pressure on the distended bowel will often enable us to locate the point of tenderness that otherwise might not be discovered. A fixed point of tenderness without stenosis would point to the probability of an ulcer which might cicatrize spontaneously. Narrowing of the lumen of the bowel with or without tenderness would indicate a permanent lesion or a progressive pathologic process that might in time become a menace to life or health (Figs. 2, 4 and 5).

BASIS FOR RATIONAL TREATMENT.

Any rational treatment of sigmoid disease must be based on our conception of the successive pathologic links that connect the anatomic and physiologic peculiarities of the sigmoid with the dangerous inflammatory and obstructive lesions which we find in late operations. To recognize and to interrupt this process at the earliest possible moment, and before irreparable damage has been done, becomes the aim of those who appreciate the relative frequency and importance of sigmoid pathology in each stage of its progress.

Pathology here passes from the medical to the surgical field: First, when any ulceration or necrotic process starting in the mucosa extends to or includes the peritoneum; second, whenever there is any evidence of mechanical obstruction, partial or complete, regardless of the cause; third, when a localized peritonitis exists that does not readily yield to simple measures directed to the suspected cause. This does not mean that every such case should be subjected to immediate operation, but that the decision as to when, when not and how to operate can best be made by those who view these conditions from a surgical standpoint. Medicines, especially cathartics, are always useless and frequently harmful.

The essential principle of treatment of sigmoid ulcer, like that of gastric ulcer, is rest. How best to secure that rest with the least distress and the greatest assurance of safety to the patient no one may as yet presume to state dogmatically. The starvation plan, irrigations from below, or continuous currents of aqueous solutions from above, through an opening in the colon; or in the presence of chronic stenosis or threatened occlusion, iliosigmoidostomy, excision of the ulcer, or exsection of the diseased portion of the gut, are all procedures that may be considered.

In formulating the treatment of a pathology that has rarely been seen or studied except in the most advanced stages we can not expect at once to be free from doubts and misgivings, but as we gradually learn to outline and to carry to the consulting room and bedside a well-defined mental picture of the successive morbid processes in sigmoid disease, more accurate methods of diagnosis will be suggested and more effective means of treatment will be evolved; and we may be assured that in this region, as in other parts of the body, symptomatic medication and "last resort" surgery will in due time be supplanted by rational measures and timely operative procedures.

DISCUSSION.

ON PAPERS OF DRS NILES AND JONAS.

Dr. William H Wathen, Louisville, Ky., said that recently, while preparing a paper on gastro enterostomy, he corresponded with five men whom he considered among the most distinguished surgeons in Europe in abdominal work—the late von Mikulicz, Kocher, Czerny, Robson and Moynihan—and five distinguished surgeons of this country. The inquiry was as to the kind of anastomosis they make and what method of suturing they use From the correspondence, he was fairly convinced of the fact that the tendency was to eliminate, as far as possible, all mechanical means in making any sort of anastomosis of the intestinal tract, from the stomach to the sigmoid flexure. He believes that the Murphy button has done more in the process of evolution to show what can be done in anastomosis of the intestinal tract than anything else, and by its use it has been possible to demonstrate conclusively the promptness of firm union in properly coapted surfaces; and, also, that in the hands of the experienced abdominal surgeon the use of the suture is the safest and best method in nearly all cases. Therefore, he advises the use, with few exceptions, of the continuous suture, and especially where it is possible to use Moynihan's method of bringing the parts of the intestinal tract in apposition by including each side in a forcep covered by gum tissue. The continuous uninterrupted suture should usually be used, because it is easily and quickly applied, insures more perfect apposition, and is followed by fewer immediate or ultimate complications. Simplicity and rapid technic must be emphasized as essential factors in intestinal surgery.

Dr. R. H. M. Dawbarn, New York, said that at one time he thought that the plates carved from sweet or white potatoes, and the buttons and bobbins he divised of the same material (raw vegetable tissue) were an improvement on the decalcified bone plates of Senn. Perhaps they were; but he has not used anything of the kind for many years. For over fifteen years he has used the continuous linen suture in gut-work, plus a single temporary stitch, so placed as to make smoothly tense the surface being sewn together. He is convinced that simple suturing is the safest method and the best, and that in place of the Connell method, with interrupted stitches, the continuous suture (running Lembert) is the safest, using linen thread. But the continuous suture is not a safe one unless one uses with it the morphin splint, administering morphin, so as to put a stop to peristalsis for the time being, until (in a few hours), union is certain to be firm. Otherwise, the continuous suture might cut out at some point, and the wound gape in consequence. Of course, the saving of time in using the continuous suture is the main thing. This point can not be made too strongly.

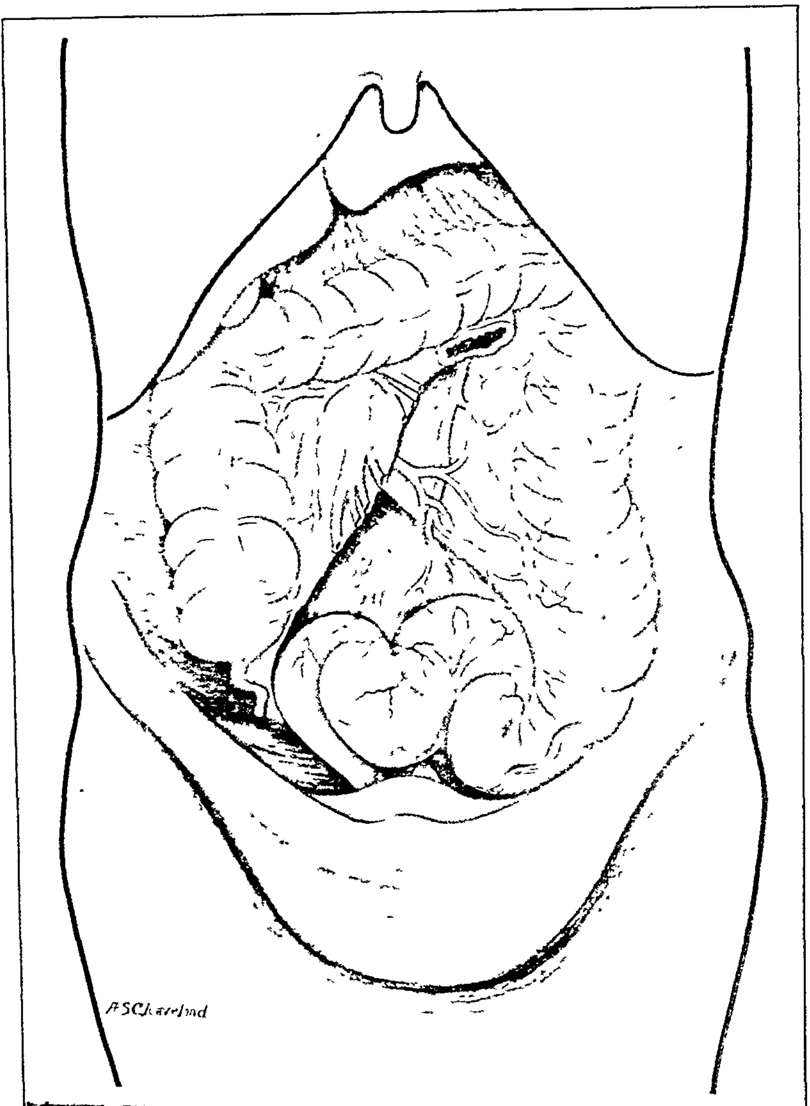


Fig. 3.—The normal sigmoid. From many observations made by the author in the course of his operative work.

As regards the Murphy button: If one uses it anywhere in the bowel without the row of sutures about it, then one is depending on Nature to throw out a plastic exudate to surround the region; and experienced surgeons have had the sad experience of killing one or more patients, before they learned not to trust to Nature in this matter. If one sews all the way round the Murphy button in order to make it safe, then its chief advantage, that of speed, is done away with. One can suture by a running continuous simple Lembert stitch as quickly as one can put in a Murphy button and suture all the way round. Another objection to the Murphy button is that when it cuts loose, one is not sure that it will cut loose on the right side—the proximal—of the anastomosis. He has had the unpleasant experience of having the button go the wrong way, by reverse peristalsis. That is called vomiting when it occurs in the stomach, but when it occurs in the intestine there has no name been given to it. It is a condition that is liable to go on for hours and even for days; and there may be just enough contraction of the anastomotic opening so that the button never passes that point. Dr. Wyeth once reported a case where for more than 120 days the button wandered around between the anastomosis on the one hand and the stomach on the other, until the patient could not stand the colic and misery any longer and a second laparotomy was done for the purpose of removing the button. The patient again got well. But any form of anastomosis that runs even the slightest chance of risk entailing another laparotomy is not to be recommended, in comparison with an anastomosis leaving no foreign body, requiring no especial instrument for its performance, and as quick as the speediest, namely: Continuous suturing of surface, made tense, to aid speed, and safeguarded against leakage, both by rapid, plastic exudate of Nature's glue (because of light scraping of peritoneal surfaces about to be sewn together), and also by the morphin splint, carrying out that cardinal principle of good surgery, to put operated parts absolutely at rest.

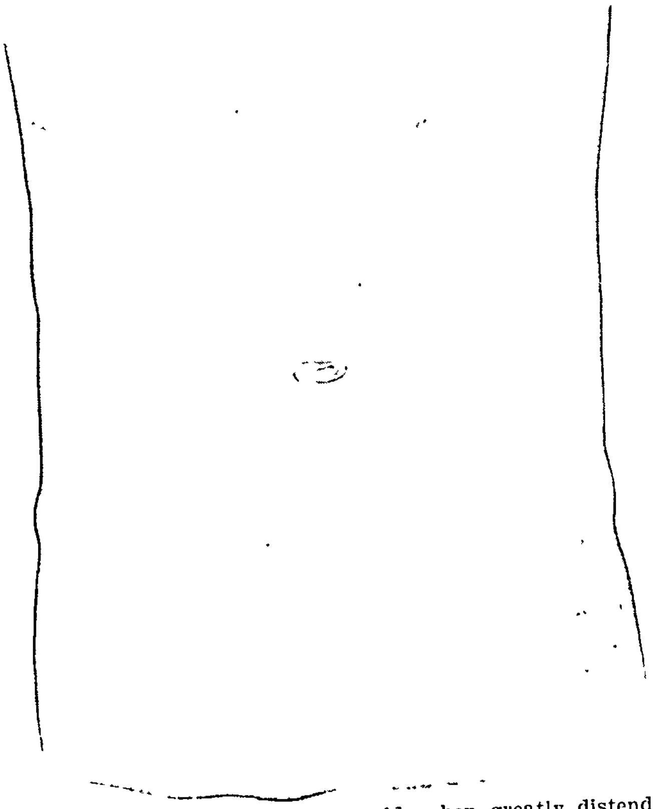


Fig. 4.—The outlines of the sigmoid, when greatly distended, as observed through the abdominal wall. This distension may occur when there is a tight stricture of the distal extremity of the sigmoid, or it may be produced by artificial inflation of the lower bowel, when the stricture is at the proximal end of the sigmoid.

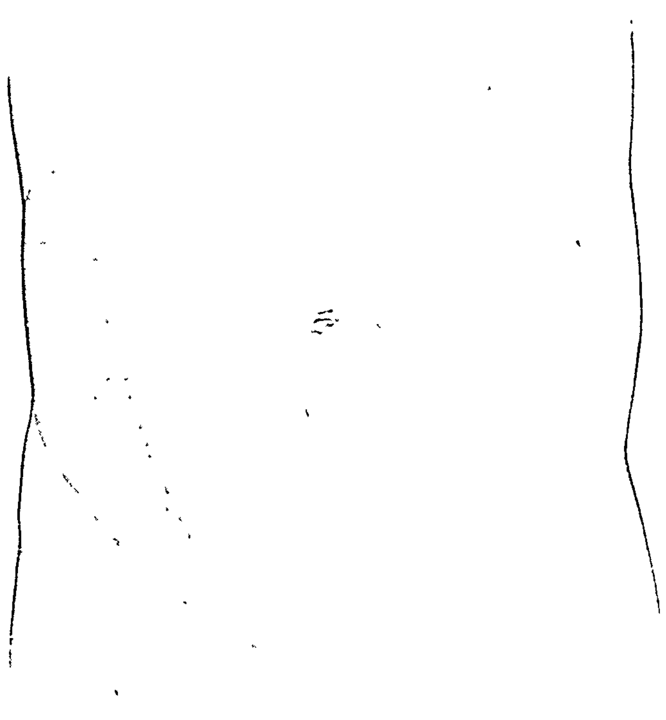


Fig. 5.—Another view of an enormously distended sigmoid. Figures 4 and 5 are redrawn from Nothnagel's "Diseases of the Intestines and Peritoneum."

Dr. F. A. Dunsmoor, Minneapolis, has been in the habit of using a button when making a gastrointestinal anastomosis, for one particular reason. The button leaves, after its escape, a peculiar circle which does not grow smaller as time goes on. This he has verified in postmortem examinations three years after operations. He has yet to hear anyone say that the opening between the stomach and the intestine did contract after having been made in the circular manner, when a Murphy button was used, no matter what became of the button afterward. He uses the suture in the colon since the button may temporarily obstruct the bowel. The lower in the intestinal tract the greater demand for the suture, but he prefers the button for operation high up in the small intestine.

As to the amount of colon to be resected. He began that work through emergency surgery, and removed the shortest possible damaged portion only. The physiologists say that the colon is not indispensable—that it does not digest food, but does absorb it, and thus helps nutrition. Dr. Dunsmoor resected the ascending colon from the head of the cecum for malignant disease, and the sigmoid and a large part of the descending colon for the same cause; but it remained for Mr. Arbuthnot Lane, of London, to give him courage to remove the colon from the terminal portion of the ileum to the splenic flexure for ulcerative colitis. Mr. Lane goes farther and removes the colon for obstinate chronic constipation.

Dr. E. W. Andrews, Chicago, called attention to the fact over fifteen years ago Dr. Nicholas Senn, at that time of Milwaukee, was making his classic experiments on the intestine of the dog, which preceded the Murphy button, and practically all intestinal work which is now so much perfected. His colleague in that research was Dr. Connell, of Milwaukee, to whom Dr. Senn gave the credit in his first book, of having devised the first bone plates for intestinal anastomosis. D Connell devised the through and through suture which hold the plates, and also one without plates. Later, Dr. F. Gregor Connell perfected what is now known as the Connell enterorhaphy, by employing it, ever since the Connells demonstrated their method in their dog experiments. Dr. Andrews has been a firm believer in the Connell suture as being the very strongest known in intestinal anastomosis. He employs it not only for anastomosis of the small and large bowel, but also for pylorectomy and gastroenterostomy. The suture has certain merits over all known stitches, the bone plates and buttons. It has at the same time the action of a clamp and of a suture line, going from the lumen of one hollow viscus to that of the next, including every layer, even the mucosa, traversing transversely through them all. When an anastomosis is made no thread can be seen from the peritoneal side, which is in distinct contrast to the Maunsell suture, where the knot lies across the suture line. Dr. Connell, when he first described this operation, gave the option between using the stitch continuously and using it interruptedly. Nine times out of ten Dr. Andrews used the suture continuously, making a back stitch about every fourth insertion of the needle. This prevents puckering and back-slipping. He was interested to note during a visit to the Mayo's clinic last fall that in performing pylorectomy, making the duodenal insertion, according to Kocher's method, they were using the Connell suture. He said that in Chicago and the West, the Connell suture has established itself most thoroughly.

Dr. F. Gregory Connell, Salida, Colo., said that the suture operation has resolved itself into the perforating and the non-perforating suture. The advantage of the perforating suture is its security. The disadvantage is a possible capillarity. This subject, the capillarity of intestinal sutures, he submitted to the section during this meeting and, therefore, did not discuss it further at this time. (The Journal, Aug. 11, 1906, page 405).

Dr. L. Freeman, Denver, called attention to the comparatively favorable prognosis of cancers of the sigmoid flexure, and cited a case which came to his notice about a year and a half ago. The patient had, in addition to the carcinoma of the sigmoid, involvement of the urinary bladder and of the peritoneal surface of the abdominal wall, so that it was necessary, in removing the tumor of the bowel, also to remove quite a large portion of the bladder and peritoneum and to resect, perhaps, six inches of the colon. Notwithstanding this complication the patient is perfectly well. Eighteen months have elapsed since the time of the operation.

Dr. A. McGlannan, Baltimore, emphasized the importance of intermittent intestinal obstruction as a symptom of cancer of the bowel. Since Dr. Bloodgood called his attention to this symptom, about two years ago, he has seen it seven times in cases where a tumor was not palpable. In all these cases there was a history of intermittent obstruction, and in each instance a cancer of the large intestine of some kind was found at the operation. That seems to be a point in diagnosis, to be borne in mind in these cases.

Dr. Charles Stoltz, South Bend, Ind., has found that it is exceedingly difficult to determine the exact nature of the obstruction previous to operation. He had a case of this kind nearly two years ago, that of a woman, 42 years of age, who had suffered since childhood from intermittent obstruction. Finally, about December, 1904, her symptoms became so intense that she sought surgical assistance. It seemed that the obstruction followed periods of fatigue. On New Year's day, after entertaining at her home, she became unable to continue her household duties. When Dr. Stoltz first saw her she had symptoms which led him to believe that she had obstructive adhesions or a small umbilical hernia, especially because of the manner in which the umbilicus was pulled about with the violent intestinal peristalsis. However, on opening the abdomen there was no evidence of adhesions or of a hernia. At the beginning of the sigmoid, however, there was a constriction and a thickening of the bowel for about five inches, the lumen being as small as a lead pencil. There were several lesser constrictions about this point, but otherwise nothing abnormal was found. He did an ileosigmoidostomy and the woman was well for about six months, when symptoms of obstruction reappeared. Recently she took a long, restful trip. During all that time she had absolutely no signs of any disturbance. Her husband, who is a physician, said that she had never been in better health. She returned home, became tired again, and her difficulty recurred. He has been unable to decide on the exact pathology. Of course, it may be ulcer or non-malignant tumor, but the fact that fatigue brought on these attacks of intermittent obstruction and that they were absent during periods of rest is an interesting feature in the case and suggestive of a neurosis.

Dr. J. B. Boucher, Hartford, Conn., said that a straight needle and a piece of linen thread are the best contrivances to be used for these cases, where there is time. In some cases, where the condition of the patient is such as to require rapid work, the Murphy button must be used. He has not had any experience with the opium or morphin splint, of which Dr. Dawbarn spoke, but it seemed to him that it might prove useful. Last year he reported six cases of resection of the bowel for cancer. Since then he has had two more, also five or six for non-malignant conditions, making thirteen or fourteen cases in all. In all these cases he used only the straight needle and the linen thread, and he has not had any mortality. Dr. Boucher thinks that in cases of cancer of the bowel the dissection should always be carried wide of the cancer. If a thorough resection is done, even desperate cases will recover from the operation and remain well for a number of years. He did a resection of the colon five years ago and the man is still living and well. The glands were enlarged clear into the pelvis and he could not get at all of them. It was a case of adenocarcinoma. Resection can be done as well, and nearly as rapidly, as anastomosis around the growth. It is strange that such patients seem to have immunity from infection to a certain extent, and their reparative power seems to be greater than that of the ordinary individual.

Dr. J. A. MacMillan, Detroit, said that although resection of a portion or of the entire colon for chronic inflammation or ulceration has been advocated by Arbuthnot Lane and others for some time, he does not believe such extreme measures for these conditions will obtain the favor of the profession. It is possible that in very aggravated cases, in which stricture seems inevitable, a resection is justifiable, but even in such cases the ulceration should be taken care of first by more conservative methods. He believes that the rational method of treating these cases is by temporary colostomy. The physiologic rest obtained in this way is followed by rapid disappearance of the ulceration and inflammation, and when the healing process is complete the artificial anus may be obliterated.

Dr. H. D. Niles said that it has become almost a habit with surgeons and internists to exclude all kinds of abdominal surgery, except in those cases that are attended by acute pain, tremor, febrile symptoms or acute obstruction. The treatment of ulceration is rest in some form. In regard to the favorable results obtained in operations on the colon, that has been the observation of all who have done much work on the large intestine, while the reverse is true in the case of the small intestine. It is surprising how many cases of malignant disease of the large intestine will survive an operation and live for years without a recurrence. He has used the Murphy button and some other appliances, and he would not like to say that he would never use them again, but gradually he has accustomed himself to do the suture operation and he likes it very much better. It has been quite a long time—years—since he used the Murphy button. He thinks that the linen thread undoubtedly is the best suture, but there is a linen, the celloidin linen, that is anhydrous. It does not soil or take up fluid or infection, and it seems to be the ideal suture material for intestinal work. He has used it and always with satisfaction. It is easier to do comparatively dextrous work with it than with any other material. The fact that it is anhydrous assures one that it is not likely to become infected, no matter what method of suturing is employed.

Dr. A. F. Jonas said that the purpose of his paper was three-fold. First, to call attention to the necessity of early recognition of this condition; second, to outline the pathology; third, to restore the continuity of the bowel after it had been broken by removal of the growth. The question of early diagnosis here is exactly the same as that of early recognition of cancer of the pylorus. The trouble with the latter is that usually surgeons wait until they can feel a lump, and then when they operate they find extensive invasion of adjacent organs. The operative success may be good, but the result obtained is not a permanent one on account of early recurrence. The same is true of neoplasms of the colon. By waiting until the tumor can be felt, and sometimes nothing else can be done, the metastases have become so extensive that recurrence takes place very soon after the operation. So that it is of the greatest importance to make use of every diagnostic aid in order to establish at least a probable, if not an absolute, diagnosis in these cases.

The methods of re-establishing the continuity of the bowel that have given Dr. Jonas the best satisfaction are the closing of the ends of the intestine by a purse-string suture and then making lateral anastomosis with suture, assisted by the Moynihan clamps, using an interrupted or continuous through-and-through suture. When the Connell suture is used there need be no fear of the tearing out of the sutures, providing the tissues are healthy. Dr. Jonas uses the Connell suture, assisted by the double loop mentioned in his paper. It is easy, rapid and safe, particularly if finally supported by a right-angle Cushing suture, and there is no danger of leakage.

TREATMENT OF ULCER OF THE STOMACH, WITH A RECORD OF CASES.*

HENRY F. HEWES, M.D.
Instructor in the Clinical Laboratory Harvard Medical School.
BOSTON.

In the treatment of ulcer of the stomach in its various forms we have to-day two general methods—medical treatment and surgical treatment.

In cases of simple, uncomplicated ulcer, that is, ulcer with or without hemorrhage, uncomplicated by permanent obstruction of the pylorus, or perforation, medical treatment offers an efficient, though not an absolutely certain, means of cure. This treatment gives in this class of cases almost universally good results as regards immediate relief or temporary and, if the treatment is thoroughly carried out, excellent results as regards permanent cure.

The efficiency of the treatment as regards the after-results or permanent cure is dependent to a large extent on its thoroughness. In cases in which treatment is completely carried out, that is, when strict treatment is enforced for a considerable period, a period of at least four months, and when a proper manner of living is pursued subsequently, complete cure may be expected in a large majority, probably 80 per cent., of the cases.

Surgical treatment of simple ulcer is capable of providing an efficient means of cure for the disease. The record of after-results or permanent cure in the cases which survive the effects of operation under surgical treatment is quite as good at the present writing, taking the grand average of cases, as that secured by medical treatment. Owing to the number of deaths which have occurred as the result of operation, the record of immediate results of surgical treatment is, however, much inferior to that obtained under medical treatment and the record of the grand total of final results, including the deaths present in the immediate results and the recurrences or failures to cure included in the record of after-results, of surgical treatment, is much inferior when we consider all the factors of benefit to the patient, the duration of life and the comparative freedom from symptoms of stomach disturbance, to that obtained under medical treatment. That is, the expectation of benefit to the patient, taking the average of all cases, is, by the verdict of the records received up to date, greater under medical treatment than under surgical.

The argument for surgical treatment in simple ulcer lies in the fact of the considerable number of recurrences which occur in medical cases, taking the average of all cases, those of individuals in good and poor circumstances, private cases and hospital cases alike, and in the deaths which result from such recurrence.

Even with this record of recurrence medical treatment is, or can be when it is thoroughly carried out, as the results prove, a satisfactory method. In the face of this efficiency of medical treatment there can be, it seems to me, no excuse for the employment of surgical treatment with its equal liability to failure to cure, and the additional chances of death, which the records show to be associated with this treatment, in place of medical treatment in the initial treatment of cases of simple ulcer. When surgery can show better average results as regards both duration of life and permanent cure it may justifiably replace medicine in the treatment of this disease. At present it is to be considered in connection with this class of cases, only in cases which have failed to find relief or have recurred after being subjected to good medical treatment.

In cases of chronic ulcer complicated with disturbance of the ability of the stomach to empty its contents into the duodenum, that is, cases of obstruction of the pylorus, or contraction of a part of the stomach wall from ulcer, causing a permanent gastrectasis, medical treatment gives very unsatisfactory results as regards the cure of the combined condition. Under such treatment patients with this affection may, in many instances, regain comfort as regards symptoms, health, strength, weight, and ability to work, and may keep this gain as long as treatment is continued. Permanent cure, that is, absence of stasis and symptoms of discomfort for an indefinite period after the cessation of treatment is, however, rarely accomplished by this means.

Surgical treatment, on the other hand, gives excellent results as regards permanent cure in this class of cases. There are, it is true, a certain number of failures to cure or of recurence symptoms, and a certain number of deaths from operation under this treatment. In a large majority of cases, however, the treatment gives excellent results, and in consideration of this latter fact, together with the fact of the inefficiency of medical treatment to provide cure for this condition, surgical treatment should, it seems to me, be advised in all cases of this type, once the diagnosis is definitely determined.

The only argument against this procedure lies in the fact that the chances of an establishment of a fair condition of health and comfort under a continued medical treatment are fairly good, and that death under such conditions is a very rare occurrence, while under surgical treatment, though the chances of cure are excellent, there is always the risk of death as the result of operation. If the patient prefers the kind of comfort which can be obtained in a life of continued treatment, there is nothing more to be said. Excellent condition can often be maintained in this way and exacting treatment is not always necessary to such maintenance. On the whole, it seems to me that, as a rule, surgical treatment is good medical advice in these cases.

For the treatment of cases of ulcer not included in the above classes, that is, cases complicated by perforation, whether the case be one of acute perforation or one in which perforation having occurred at some previous time and adhesions between the stomach wall and the surrounding tissues having been established, symptoms of stomach disturbance are still present, we have but one form of treatment, surgical treatment.

In support of these conclusions in regard to the efficiency of our modern methods of treatment of ulcer of the stomach in its various forms, I present a record of the results of treatment of the cases of ulcer of the stomach which have been under my observation and care during the last ten years. The record is made up of all cases of ulcer treated by me in private practice and such hospital cases as have been under my observation both during and after their sojourn in the hospital. Only such cases are included as have been under observation for a period of at least two years subsequent to the time of the initial treatment. Many of the cases have been followed for a much longer period.

---

* Read in the joint session of the Sections on Practice of Medicine and Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

In the first class of cases, those of simple, uncomplicated ulcer, I have included only such cases as have a record of bleeding, that is, a history of hemorrhage or a finding of blood either in the gastric contents or feces, for the reason that without such evidence (the bleeding) the existence of simple ulcer can not, save possibly in rare cases, be accurately determined, and I wish to include in my record only cases of undoubted ulcer. Cases diagnosed as ulcer at the time of the initial treatment, which have subsequently been proved to be cancer, have not been included.

In studying these records of cases of simple ulcer I have noted a fact of which I have for a long time been aware, the fact of the much greater superiority, on an average, of the results of treatment of ulcer in individuals in comfortable circumstances to those obtained in individuals of limited circumstances, as, for example, the average of hospital cases, independently of the initial severity of the cases. These results are explained, I think, by the greater facility of the first class of individuals, through their easier circumstances and their greater intelligence to carry out a thorough treatment for a long period.

It is my custom in all cases of ulcer treated medically to insist on a continuation of strict régime as to diet and rest for a period of at least four months and to advise a certain precaution as to regimen for a much longer period. This thorough regimen can not, as a rule, be carried out with strictness by poor people, the necessities of their life, the requirements of work and the lack of facilities of obtaining proper food or proper surroundings, prohibiting it. As a result they do not do as well, on the average, as their better circumstanced colleagues in misfortune.

As it is the records of those cases which thoroughly fulfill the requirements of treatment which best serve as a criterion of the efficiency of the treatment, it seems to me that the real efficiency is to be judged to a certain extent, at all events, by the results obtained in these selected cases rather than by the record of all cases. I have, therefore. included in my summary of the cases of simple ulcer treated medically, in addition to the record of all cases, a separate record of the results of the cases which received the complete regimen.

1. Cases of Simple Ulcer of the Stomach Treated Medically.—There were 51 of these cases. The immediate results were: Complete relief (cure of hemorrhage and other symptoms), 48; failure in relief of symptoms for any length of time, 2; died (from hemorrhage while under medical care), 1.

The two patients whose symptoms were not relieved were afterward operated on. Both showed evidence of a former perforation with adhesions of the stomach over the site of perforation to the anterior abdominal wall. One died shortly after operation. The other recovered from the operation by excision and has been well since.

The after-results in 49 cases were: Cured (no recurrence of symptoms within two years), 31, or 63 per cent.; recurrence (of stomach symptoms), 18, or 36 per cent.; died (from ulcer), 1, or 2 per cent.

Among the 49 patients there were 16 only who carried out the complete treatment described, that is, who continued under a strict régime as to rest and diet for four months. The remaining 33 cases remained under strict treatment for periods of from one to two months only

The record of after-results in these two sets of cases is as follows: In the 16 cases which received complete treatment there were: Cured, 13, or 80 per cent.; recurred, 3, or 18 per cent; died, 0. In the 33 cases which received treatment from one to two months there were: Cured, 18, or 54 per cent.; recurred, 15, or 45 per cent.; died, 1.

The cases included in both sets were all cases of bleeding ulcer and, on the average, of equal severity. The less good results obtained in the cases in which treatment was continued for two months only indicate, I think, not an inherent lack in the possibilities of medical treatment, but the necessity for the provision of a thorough treatment in all cases. The difference in the results in the two sets of cases was, in all probability, not due entirely to the lesser duration of strict treatment in the latter set, but in part to the fact that the patients took less good care of themselves during the period subsequent to that of the strict treatment.

2. Simple Ulcer Treated Surgically.—There were 13 cases of simple ulcer treated surgically. All were cases in which a failure to relieve symptoms or a recurrence had occurred under or after medical treatment. The results of treatment were as follows: Cured (no recurrence of symptoms within two years), 6, or 46 per cent.; recurred; not relieved by operation, 3, or 23 per cent.; died (shortly after operation), 4, or 30 per cent.

The number of surgical cases in my record is too small to allow of any definite conclusion in regard to results as compared with the results of medical treatment. These facts of importance are brought out by the record:

First, the fact that surgical treatment does serve as an efficient means of cure of simple ulcer. Thus, of the 9 cases surviving operation, 6, or 66 per cent., were completely cured.

Second, the fact that recurrence or failure to relieve symptoms does occur after operative treatment. Thus, among 9 cases which survived there were 3, or 33 per cent., of recurrence of stomach symptoms.

Third, the fact that death from operation is a not uncommon associate of surgical treatment.

3. Chronic Ulcer with Gastrectasis.—There were 26 cases of chronic ulcer with gastrectasis. The list includes only cases of chronic gastrectasis in which there was evidence that the cause of the stasis was ulcer and not cases of temporary stasis due to acute ulcer. Of the 20 cases treated medically there were: Cured (no symptoms or stasis during a long period without treatment), 0; relieved (able to avoid discomfort and keep in physical condition by constant application of medical treatment), 17, or 85 per cent.; not relieved, 3, or 15 per cent.; died under medical treatment, 0.

A number of patients after pursuing a course of treatment have been able to go for periods of from one to three months without treatment, but a return of symptoms has occurred in every instance.

The following are the results of the 14 cases treated surgically: Cured, 9, or 64 per cent.; recurrence or failure of relief, 3, or 28 per cent.; died shortly after operation, 2, or 14 per cent.

Although, as I have stated, the facts are in favor of medical treatment and against surgical procedure for the initial treatment of simple ulcer of the stomach in the average of cases, there are certain cases where this principle is not to be strictly maintained. Occasionally in practice we meet with cases of stomach disturbance in which a diagnosis of either ulcer or cancer is suggested, and in which there is reason to believe from the character and duration of the symptoms that the latter condition, if present, may be so little advanced that the complete eradication of the disease may be accomplished by surgical procedure. In such cases it seems to me that immediate operation is justifiable. It is true that only in rare instances is it possible to eradicate cancer by operation. Cases of this kind do, however, occur and it is by following this line of procedure that we are likely to find them. The following case report illustrates this point:

History.—The patient, a man aged 50, came to me in 1904. He complained at the time of a dull pain in the epigastric region present much of the time, and slightly aggravated by ingestion of food, loss of appetite and frequent desire to raise gas from the stomach. There had been no vomiting or other symptoms. There was loss of weight. The duration of the symptoms was three months at the outside.

Examination.—Physical examination other than the examination of the gastric contents showed nothing abnormal. The hemoglobin was 85 per cent. Examination of the contents of the fasting stomach, obtained by tube 12 hours after the ingestion of food, gave the following findings: Quantity, 25 c.c.; character liquid, like the white of an egg, and colorless; no food remnants were present. The guaiac test for blood was positive. Contents gave no fermentation test with glucose. Lactic acid was absent. The contents obtained one hour after an Ewald test breakfast gave the following characteristics: Quantity, 100 c.c.; food fairly digested; free HCl present, quantity low, .007 per cent.; blood present by guaiac test.

A similar finding to that given above was obtained in the fasting contents on four separate examinations. In each instance a positive blood test was obtained. No fresh blood was seen. The feces showed blood by the guaiac test.

Operation.—The case was recommended for operation with a diagnosis of either ulcer or cancer. Operation was performed by Dr. Greenough, Oct. 14, 1904. At operation a small nodule with a slight ulceration on its surface was found in the antrum pylori. No enlarged glands were found. The nodule was excised and a pyloric resection performed.

Pathologic examination of the excised mass showed the presence of carcinoma.

The patient had a good immediate recovery and in the interval of 18 months since operation has been well. He has regained his normal weight and held it, works regularly, and has suffered from no dyspeptic symptoms. In this case the early operation was advised for the following reasons: The constant blood findings showed the probable presence of ulcer or cancer. The general picture of the symptoms was more suggestive of cancer than ulcer. The short duration of symptoms suggested that if cancer were present it might be so little advanced that the disease could be entirely eradicated by operation. Whether or not the disease has been entirely eradicated is, of course, still an open question. At all events the patient has enjoyed two years of perfect health as the result of our procedure.

ETIOLOGY AND DIAGNOSIS OF GASTRIC AND DUODENAL ULCER.*

FRANK BILLINGS, M.D.
CHICAGO.

Acute gastric ulcer and the so-called abrasions of the mucous membrane of the stomach are identical in their morbid anatomy and pathology. As a rule these are superficial and extend wholly or through a part only of the mucosa. They are not uncommon and many occur in chronic circulatory disturbances due to heart and arterial disease and to cirrhosis of the liver. They may be postoperative events, especially in abdominal section. They appear in cachectic states due to chronic diseases and are not infrequent in the new born. They may appear in certain neurotic conditions, especially in women.

These acute erosions are soft, sometimes blood stained, often multiple, frequently consist of mere slits in the mucous membrane, may be so small as to escape detection and usually would not exceed 4 mm. in diameter. The largest may be dignified by the name of an ulcer. These acute processes are important only when the erosion involves an artery or vein of considerable size, when a fatal hemorrhage may occur. These acute processes will not be further considered in this paper.

ETIOLOGY.

Chronic ulcer of the stomach and duodenum, frequently termed round, perforating or peptic ulcer, follows nutritional disturbance of a limited area of the mucosa, which results in the destruction of this circumscribed region by the gastric juice. The gastric juice is the destructive agent and, therefore, plays the most important rôle in the causation of ulcer of the stomac and duodenum.

The cause of the condition which permits the gastric juice to attack a part of the mucous surface of the stomach or duodenum is not altogether clear. Probably several conditions may be important factors. It is probable that in certain instances vascular disease in the form of thrombus or embolism, with or without antecedent disease of the wall of the vessel, may be a cause. It is equally true that this condition is not present in the majority of the individuals who suffer from ulcer.

Hyperacidity of the gastric contents, with or without stagnation, is a common accompaniment of ulcer, but it is probable that it is an accompaniment and not a cause of the disease. Chlorosis has been noted in ulcer of the stomach, especially in the young female, but many cases of ulcer occur without anemia and the anemia, when present, is very frequently the result of the loss of blood incident to the ulcer. Central or pneumogastric nerve disease has been ascribed as a predisposing cause, but the evidence is not conclusive. Local ischemia from muscular spasm, especially in the pyloric region, thus predisposing the circumscribed area to destruction by the gastric juice, has been ascribed to this nervous influence. Traumatism from external violence or local traumatism from the contact of rough particles of food on the mucous membrane, and especially in the pyloric region, has been ascribed as a cause. It is known that small traumata of the normal mucous membrane heal rapidly and trauma alone is, therefore, probably not a cause. Stasis of stomach contents with decomposition has been ascribed as a cause, and it doubtless is a factor, especially when associated with bacterial infection. Bacterial infection with invasion of the mucous membrane may so reduce the nutrition of the cells as to render them liable to digestion by the gastric juice. Recently Dr. Fenton B. Turck, Chicago, has been able to produce a typical chronic ulcer of the stomach by feeding dogs with colon cultures over a considerable period of time.

Self-digestion does not occur in a healthy stomach because of a resistance of the normal cells which has heretofore been called vital. It has been suggested that this resistance is, in reality, the presence in the cells of the stomach of an antibody. Under certain conditions this antibody may disappear or may be so disturbed that it no longer protects the mucous membrane in certain localities permitting the gastric juice to attack the tissues.

---

* Read in the joint session of the Sections on Practice of Medicine and Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

To sum up our present knowledge of the cause of ulcer, it is that the gastric juice is the active agent in its production in a limited area and that this occurs because of a nutritional disturbance in a circumscribed region of the mucosa. That the nutritional disturbances may be brought about by bacterial infection associated with local trauma and that vascular disease, local areas of muscular spasm, gastric stagnation and anemia may all serve as factors in certain instances.

DIAGNOSIS.

In a classic case of ulcer there are three chief diagnostic signs. These are, in their order: pain which is usually felt in a localized area and is aggravated by a palpation and by food; second, hematemesis or melena; third, hyperchlorhydria and the some time evidences of gastric stagnation.

The pain of ulcer is characterized by the fact that it is usually felt in the localized area and that it frequently appears to the patient to pass through the body, to be felt in the back, usually on the left side near the spine at the eleventh or twelfth rib. The pain is often periodic, appearing for a day or days with severity and may be followed by an interval of less discomfort varying from days to weeks to months or even years. With the pain there is a localized tenderness which is very severe and is usually situated in the epigastrium. The pain is frequently aggravated by food. In certain instances this occurs immediately after food enters the stomach and in others not for one, two or even three hours after food is taken. The pain frequently continues until the stomach is evacuated by vomiting or until the food has passed through the pylorus. Not infrequently one obtains a history of attacks of acute exacerbations of pain extending over a period of years. These exacerbations are frequently attended with vomiting of food, with or without the appreciable appearance of blood. Frequently such patients are said to have dyspepsia, with the appearance periodically of neuralgia of the stomach.

Hematemesis and melena occur in fully one-half the cases of ulcer of the stomach. The vomited blood is usually dark in color, acid in reaction and is clotted. When passed by the bowel it is frequently tar-like in consistency and color. The occurrence of blood in vomited material and in the stool in an individual who has suffered from dyspeptic symptoms, and especially if he has had pain, is an important sign of ulcer. Occult blood may be detected in the stomach contents and in the stools from all patients who suffer from ulcer of the stomach. The appearance of occult blood usually is not constant. but will always be found if the tests are applied over a sufficiently long period of time. The Weber test for occult blood is a practical one and is reliable when safeguarded by the exclusion of the contamination of the stomach contents and of the stool, by blood from other sources, than the stomach and duodenum. The presence of iron taken as medicine and excreted in the stool will give a blue line resembling the blue line of the presence of blood when peroxid of hydrogen is used in the Weber test.

Hyperchlorhydria is present in the majority of ulcers of stomach and of the duodenum. In a small minority of patients with ulcer there may be a normal or subnormal amount of HCl or an entire absence of it in the stomach contents. In many conditions, especially neurotic in character, hyperchlorhydria exists without ulcer. Therefore, the occasional absence of hyperchlorhydria in ulcer, and the fact that it frequently occurs in neurotic conditions, makes it less reliable as a diagnostic sign in ulcer. Hyperchlorhydria with evidences of pain as indicated above and with the presence of blood, either evident or occult, in the stomach contents and the stool, however, is a positive sign of ulcer. Hyperchlorhydria with gastric stagnation and especially if the fasting stomach shows the presence of a considerable amount of acid secretion, is also of importance in the diagnosis of ulcer.

Chronic ulcer is often latent, and, if latent, one or all of the signs given above may be absent. Frequent intervals of latency follow periods which present the above symptoms. A careful investigation of the history of the patient will frequently enable one to elicit a history of attacks of acute dyspepsia associated with pain followed by intervals of latency with little or no symptoms of indigestion. In the latent state an ulcer may be partially or completely healed and the subsequent acute attack be due to a recurrence of the ulceration or to the formation of a new ulcer. In the latent period a careful examination will show, as a rule, undue epigastric tenderness; will usually show hyperchlorhydria, and, if the ulcer be unhealed, occult blood in the stomach contents and stool. Not infrequently, too, the latent condition will be accompanied with the secretion of an usual amount of acid gastric juice within the fasting stomach.

Duodenal ulcer is not infrequently associated with gastric ulcer, and its etiology is probably the same. Ulcer occurs in the duodenum between the pylorus and the papilla of the bile duct. So situated, its position is so near the pylorus that it produces practically all of the symptoms of the gastric disease, with the exception that usually melena alone and no blood vomiting occurs.

Chronic ulcers of the stomach occupy, in the great majority of cases, the pyloric half of that organ and the largest number of them appear on the posterior wall. When near the pylorus, the saddle ulcers, so called, may occur, and in some instances they may cover a very large surface. When near the pylorus they cause tonic contraction of the stomach, involving the pyloric end of the stomach with resulting stenosis. Stagnation of stomach contents results with, at first, hypertrophy of the muscle of the stomach wall. Chronic ulcer involves the deeper structures of the stomach wall and may have at its base the submucosa, the muscle or the thickened peritoneum which frequently becomes adherent to some neighboring organ. The scar resulting from partial or complete healing of an ulcer, the infiltrated and thickened wall of the stomach or pylorus and the perigastric adhesions frequently produce disturbances of motility which result in symptoms of great importance in the diagnosis of ulcer. Given a history of dyspepsia with pain, tenderness, hematemesis or melena, or of occult blood in the stomach contents and stool, hyperchlorhydria with evidences of gastric stagnation, if after a full meal the stomach does not become practically empty in seven hours and if the stagnant element is hyperacid and if it contain undigested starch cells, ulcer of the stomach or of the duodenum near the pylorus is present.

DIFFERENTIAL DIAGNOSIS.

Cholecystitis, with or without gallstones, may simulate ulcer of the stomach. Such an attack is associated with more or less severe pain in the epigastrium which may radiate to the right shoulder. There is usually marked *tenderness in the* region of the gall bladder, which, when pressed on, causes a pain which usually radiates to the epigastrium. Hyperchlorhydria may be present, but in uncomplicated cases blood is absent from the stomach contents and from the stool. With adhesions between the gall bladder, the liver and the pylorus, motor disturbances of the stomach may be present. In the interval between the attack of cholecystitis there may be some tenderness in the gall-bladder region and especially if sharp percussion be made over a limited area. This tenderness is more characteristically elicited if the stomach is first distended with gas. When cholecystitis is associated with jaundice and evidences of general infection manifested by chill and febrile disturbance, the diagnosis is more plain.

In pyloric stenosis from simple hypertrophy, there is not the severe pain of ulcer nor is there usually the frequent hyperchlorhydria of ulcer. Simple hypertrophy occurs most frequently in the new born. The differentiation of pyloric stenosis from simple hypertrophy can be made usually from the history, which will elicit the fact that the patient suffered at some time in his life with the characteristic symptoms of ulcer.

Cancer of the stomach, especially of the pylorus, may present difficulties in diagnosis, for the reason that not infrequently cancer is engrafted on an ulcer base. When this occurs the history of the patient will frequently be characterized by the symptoms of ulcer with usually a latent period preceding the development of the neoplasm. In such cases there may be the pain, the tenderness and the hyperchlorhydria of an ulcer and usually the presence of a palpable tumor. As ulcer of the stomach may cause infiltration of the stomach wall and of the pylorus to a degree which will afford a palpable tumor, the diagnosis would necessarily be in doubt in such cases. In cases of sufficiently long standing, metastatic growths in the liver and in the palpable lymph glands, especially those above the clavicle, the cachexia, the anemia and the presence of decomposing stomach contents, containing lactic and other organic acids and the Oppler-Boas bacillus, would enable one to differentiate the disease from ulcer.

NEUROSES OF THE STOMACH.

Neuroses of the stomach are very common in everyday practice. They may be associated with sensory, secretory and motor disturbances. There may be severe pain and burning, hyperchlorhydria, vomiting or spasm of cardia or of the pylorus. In uncomplicated cases, blood, both apparent and occult, would be absent from the stomach contents and feces, but the other conditions named may be so severe that it will require a study of a considerable period of time to enable one to say that ulcer is not present.

Attacks of gastric crisis in the course of locomotor ataxia have been mistaken for ulcer of the stomach. There should be no difficulty in recognizing the fundamental cord disease if a careful examination is made.

The referred pain of appendicitis may appear in the epigastrium with the association of nausea, vomiting, etc. It may be mistaken for perforating ulcer, but should never be mistaken for uncomplicated ulcer.

The Dietl phenomenon occurring with floating kidney is associated with epigastric pain, nausea, vomiting, etc. It should not confuse the observant clinician.

The abdominal and sometimes epigastric pain of pneumonia and of pleuritis will not be mistaken for ulcer by one who examines his patients.

Ulcer of the stomach and duodenum is not an uncommon disease. When the classic symptoms are present, the diagnosis can be easily made. When the disease is latent and when it is masked by conditions, the result of a neurotic temperament, the diagnosis may be difficult. Sufficiently long study of the patient and of his history, of the chemical constituents of the stomach contents, of the motility and, finally, the test for occult blood in the stomach contents and in the stool, will enable one to arrive at a definite diagnosis in most individuals.

GASTRIC AND DUODENAL ULCERS.

WHEN DO THEY REQUIRE SURGICAL TREATMENT AND WHAT PROCEDURES ARE NECESSARY?*

W. L. RODMAN, M.D., LL.D.
Professor of Surgery, Medico-Chirurgical College; Professor of Surgery, Woman's Medical College of Pennsylvania.
PHILADELPHIA.

We may say that surgical opinion has crystallized on some phases of ulcer, is crystallizing upon others and in some phases is still chaotic. The treatment of such complications as perforation and subphrenic abscess admits of no discussion whatsoever and may definitely be put to one side. Both must be met by prompt operative procedure, and it is not a question of whether to operate, but how. So far as hemorrhage is concerned there is honest room for doubt, and the variety of ulcer, its acuteness or chronicity, the amount of the hemorrhage, its recurring nature and the size of the vessel involved must be considered before a conclusion can finally and rightly be made. There is a greater difference of opinion between internists and surgeons as to the treatment of non-perforating, non-hemorrhagic ulcers with disabling adhesions and other gastric disturbances, purely mechanical in nature, following in their wake.

PERFORATION.

It is not to be questioned that spontaneous recovery may take place in perforation of either a gastric or duodenal ulcer, but in admitting the possibility of such an occurrence we should not, by accentuating it, make it appear even remotely probable.

Perforation is best considered by subdividing it into acute, subacute and chronic.

By acute perforation is understood a sudden communication between the stomach and peritoneal cavity, when the stomach is full of fluid and solid contents; extravasation necessarily occurs and the effects are usually instantaneous and overwhelming. By subacute perforation is understood a more insidious process, or, if as sudden, occurring when the stomach is empty. In either event extravasation into the peritoneal cavity will not occur, or if it does, to a most limited extent. Here a neighboring piece of omentum or coil of intestine may instantly cover the small opening made and effectually prevent extravasation. By chronic perforation a much slower and more stealthy process is understood. Here the plastic exudate limits the extravasation and a subphrenic abscess results. It should be treated by drainage, employing the abdominal, lumbar, or transpleural route, according to the preference of the surgeon and the exigencies of the case. A majority favor the abdominal route, some the combined abdominal and lumbar, while Körte, who has had a vast experience with subphrenic abscesses, prefers the transpleural route.

I have seen three unquestionable cases of subacute perforation resulting in spontaneous recovery. Two were confirmed by exploration when gastroenterostomies were subsequently done. I am of opinion that perforations acute and subacute are far more common than formerly believed and my reasons for such belief are the comparative frequency of operations at the present time for perforation in latent ulcers where the disease previously had not even been suspected. (The symptoms of ulcer are at times either so masked or completely wanting that the disease is overlooked by the best physicians). Secondly, and more to the point, demonstrable and dense adhesions are found at the site of perforation. which could not have occurred except as a result of severe perigastritis following perforation. I was both interested and amazed to find that in twelve successive gastroenterostomies performed by W. J. Mayo during ten days recently passed with him, in three cases the evidence was sufficiently convincing to this careful and judicious surgeon to cause him to record them as having previously perforated. Not less interesting is the fact that eight of the cases were operated for duodenal, three for gastric ulcer, and one for a large ulcer involving both pylorus and duodenum. The ulcer was not only found in each case but it was easily demonstrable to every one present. Duodenal ulcers are far more common than we have hitherto thought and in the Mayos' experience are practically as common as gastric. My own more limited experience leads me to the same conclusion: three of the four last operations I did were for duodenal ulcer, near the pylorus it is true, and would formerly have been designated pyloric. They are practically always within one inch of the pylorus.

---

* Read in the joint session of the Sections on Practice of Medicine and Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Chronic perforations occur on the posterior wall and at the lesser curvature of the stomach. Per contra, perforations of the acute variety are generally found on the anterior wall. In operating for perforative gastric and duodenal ulcer there are several questions to be considered and they should be decided by the exigencies of each case.

Shall the ulcer, when found, be excised? A few favor excision but a majority do not. The tissues are necrotic, uncontrollable hemorrhage may be started, and extravasation into the cavity further increased by the manipulations necessary in excising a perforated ulcer. A few interrupted Lembert's sutures, infolding the perforation, will best meet the indications if supplemented with an omental graft. If the omentum can not be utilized in this way, gauze should be used both to protect the opening and for drainage. If the extravasation has been limited mopping will suffice, drainage, however, should usually be employed. If the perforation has been acute and the general cavity has been contaminated by gross quantities of gastric contents, lavage should be thoroughly made and supplemented by suprapubic drainage. Here the Fowler position and constant irrigation of the rectum with normal salt solution, are of the greatest value. It is rarely wise to supplement suture of a perforated ulcer by gastroenterostomy. If the ulcer be at or near the pylorus, so that the infolding of the perforation results in pyloric stenosis, then, and only then, would it seem best to perform gastroenterostomy. By the time a perforation is satisfactorily closed and the toilet of the peritoneum completed the condition of the patient will not encourage, if indeed warrant, further operative measures.

Should suturing, excision, resection, or pylorectomy all be impracticable, as is occasionally the case, on account of necrotic tissues or bewildering, if not insuperable adhesions, a tube should be placed in the bowel, distal to the perforation and brought out of the stomach as in Witzel's gastrostomy. The operative results for perforation have not been as satisfactory as they should. yielding a mortality of rather more than 50 per cent. English reports 50 consecutive operations at St. George Hospital, London, with a mortality of 60 per cent. F. and G. Gross' statistics include 369 operations with 187 deaths (50.67 per cent).

These cases analysed show:

First, 12 hours, 88 cases, 22 deaths, 25 per cent.
Twelve to 24 hours, 55 cases, 29 deaths, 52.72 per cent.
Twenty-four to 48 hours, 63 cases, 36 deaths, 56.06 per cent.
After 48 hours, 31 cases, 25 deaths, 73. 91 per cent.

The best results followed operations done between the fifth and tenth hours, as the mortality was 16.25 per cent. With early diagnoses and prompt operations the mortality should, in the near future, be reduced to 15 or even 10 per cent. The extravasated gastric and duodenal contents are frequently sterile, therefore cause a less virulent and septic peritonitis than perforations of the small and large intestines, and should give better operative results. Moreover, perforations of the intestines usually occur in typhoid patients, unable to withstand both the primary shock and subsequent operative procedure.

HEMORRHAGE.

The frequency with which hemorrhage, as a symptom of gastric and duodenal ulcer is found, varies greatly according to different authorities. It is a marked symptom in at least 50 per cent. of all cases. If the gastric contents and stools were carefully examined macroscopically and microscopically from day to day the probabilities are that it would be found in nearly every case. To give some idea as to the importance of hemorrhage as a complication of ulcer we may say that in a city of 1,000,000 inhabitants, fifty thousand (5 per cent.) will suffer from gastric ulcer. Of this number one-half will bleed from time to time, and in four thousand cases (8 per cent. of those with ulcer) the hemorrhage will be lethal.

We must, so far as we can, differentiate between hemorrhages following acute and chronic ulcers, respectively. The former are not recurrent as a rule, and are usually recovered from. The diagnosis of hemorrhage, associated with acute ulcer, can generally be made, as it occurs in young anemic women in the majority of instances. It is due to a superficial erosion of the mucous membrane, the exulceratio simplex of Dieulafoy, but may be due to the perforating ulcer of Cruveilhier. The hemorrhages occur, as a rule, without warning, and while marked and causing extreme anemia in certain instances, promptly yield to medical treatment. Surgical intervention is wholly unnecessary. Of all the remedies employed for arresting such hematemeses none acts so promptly and certainly as hot water (temperature 120 to 130) introduced through a stomach tube. I have seen the best results follow its use where all other agents had proven futile and life was practically despaired of.

HEMORRHAGE FROM CHRONIC ULCER.

The bleeding from a chronic ulcer is essentially recurrent. In considerably more than 50 per cent. of all cases it is due to ulceration into a vessel of some size, namely, the splenic, pancreaticoduodenal or coronary arteries, or their arterioles, in the order named. The size of the vessel involved makes it unsafe to depend upon Nature to arrest the hemorrhage, or on simple measures which may be entirely sufficient where the oozing is from capillaries. The surgeon will usually see the case too late to act during the first hemorrhage. Should he do so, it is best to wait until the recurrent nature of the hemorrhage has been established. During a second severe hemorrhage it may be unwise to operate. As soon, however, as the patient has sufficiently recovered from shock, it is certainly best, to prevent other hemorrhages, which may now be looked on as reasonably certain. There are two ways of controlling the hemorrhage, the direct and indirect methods. In the former, the hemorrhage having been located, the bleeding point is excised, ligated, cauterized, or otherwise treated. In the latter method the stomach is made to contract, emptied of its contents and placed relatively at rest by means of a gastroenterostomy or jejunostomy. No one can doubt that the first, or direct method is more efficient and prompter. Where the ulcer can be located and there are no prohibitive adhesions, I should invariably seek to control hemorrhage by the direct method. If there is no tumor, no thinning or discoloration of the gastric walls to indicate the probable source of the hemorrhage, gastrotomy may be practiced, the entire stomach being carefully examined through a Ferguson's speculum with an electric light, and, the bleeding point, if found, treated.

Should the search prove futile, as it often will, the opening made into the stomach may be utilized in doing a gastroenterostomy, which will frequently, though not always, be sufficient to effect hemostasis. Of the direct methods of treating hemorrhage, excision or partial gastrectomy is the most satisfactory, preventing as it does future hemorrhages, perforation and malignant degeneration. Next to it I place simple gastrotomy followed by ligating the mucous membrane en masse, so as to draw up a well-marked cone after the method advised and successfully practiced by Andrews. Transfixion of the bleeding surface with careful ligation has often succeeded. Cauterization not only seems to me unsafe theoretically but has been followed by subsequent perforation in several cases. I wish to dissent most positively from the optimistic statement which has been made by those high in authority, that gastroenterostomy will surely and quickly relieve hemorrhage. A sufficient number of cases have been reported by competent and trustworthy surgeons from all parts of the world to lessen the estimate in which it has been held, if, indeed, they do not wholly discredit it as an efficient remedy. That gastroenterostomy will generally relieve capillary bleeding or hemorrhage from arterioles is likely; that it will arrest hemorrhage from a vessel of considerable size which has been eroded laterally, making contraction and retraction within its coats impossible, is to say the least, questionable.

Fatal cases of hemorrhage after apparently successful gastroenterostomies have been reported by Mayo, Deaver, Kocher, Robson, Moullin, Connell, Czerny, Rydygier, Kümmell, and many others—von Eiselsberg losing three cases and Körte two. Anatomy and pathology are not to be forgotten and it is unreasonable to expect hemorrhage from a vessel of considerable size, with a lateral opening into its caliber, to be arrested by anything short of direct surgical measures. Three months ago I operated for duodenal ulcer, performing a posterior gastroenterostomy without a loop and subsequently the patient lost one gallon of blood. I have never seen such furious hematemesis and melena. Morphia, ice and astringents failed to make any impression whatever on the bleeding, which was finally arrested, when the patient was pulseless and almost in articulo mortis, by introducing a stomach tube and pouring a pint of very hot water into the stomach. During the past 4 months there have been frequent bleedings, none of them, however, severe. They are becoming less frequent, rarely amount to more than three or four ounces and will probably cease altogether with the healing of the ulcer. She has been a difficult patient to control and could not be kept on liquid diet; in fact, has at times eaten most imprudently and nearly every attack of hematemesis has been preceded by acute indigestion caused by gross indiscretions in diet.

CURATIVE TREATMENT OF ULCER.

We now come to the treatment of ulcer itself apart from such complications as perforation, hemorrhage and subphrenic abscess. Acute ulcers, occurring as they generally do, in young anemic women, tend to heal spontaneously and should be treated strictly by medical means. Chronic ulcers, usually occurring in men past forty, show much less tendency to heal under medicinal and dietetic treatment and when they seem to do so the cure is usually not abiding. The statistics of 500 cases treated at the London Hospital show that about 50 per cent. were uncured by medical means, and of those discharged as cured, one half relapsed. The results secured at the Massachusetts General Hospital are entirely in accord with those of the London Hospital. Is it, therefore, to be wondered why an increasing number of patients with gastric ulcer tire of medical treatment and seek surgical aid. It is well to recall at this time that the mortality from the medicinal treatment of ulcer is at least 25 per cent. (13 per cent. from perforation, 8 per cent. from hemorrhage, the balance from anemia, phthisis, etc.). If we exclude acute ulcer, which, we admit, tends to heal spontaneously as a rule, it will be found that the mortality under the medical treatment of chronic ulcer is perhaps actually greater than 50 per cent. I would, therefore, insist that medical treatment in chronic ulcer be not persisted in longer than four weeks, the limit given by Leube, the most optimistic of medical men, for if it has not succeeded by this time it almost surely will never succeed. Having decided upon surgical intervention it becomes necessary to choose between methods of relief. Of these, pylorectomy, or excision of the ulcer-bearing area, partial gastrectomy, gastroenterostomy, pyloroplasty and jejunostomy may be fairly considered. If the ulcer or ulcers are situated near the pylorus, as they will be in 80 per cent. of all cases, pylorectomy, or excision of the ulcer-bearing area should undoubtedly be given the preference, provided the pylorus is free from adhesions or can easily, along with the upper portions of the duodenum, be mobilized. It alone successfully deals will multiple ulcer, gastric and duodenal, prevents perforation, hemorrhage, disabling adhesions, stricture, hour-glass contraction and malignant degeneration. Moreover, it leaves the stomach in the best condition for its future usefulness. The strongest reasons in favor of pylorectomy are the multiplicity of the ulcers and the great danger, hitherto scarcely appreciated, of cancerous implantation upon the base of the ulcer. That Hauser, who estimated that 6 per cent. of gastric ulcers subsequently became malignant understated the fact, is now generally recognized by operating surgeons of experience. I have seen two cases of cancer of the stomach within the past six months where it was next to certain that the malignant disease had been preceded by ulcer for many years. The experience of the Mayos makes it very plain that more than one-half (54 per cent.) of all gastric carcinomata operated upon at the Rochester clinic in 1905 (40 cases) were preceded by a well-marked history of ulcer and anatomic evidence of the fact was found after operation.

When it is recalled that the topography of ulcer and cancer is practically the same, each occurring at the pylorus in 80 per cent. of all cases, the conclusion is almost an irresistible one that malignant transformation must be far more common than hitherto suspected. I remember seeing three specimens presented at one meeting of the Pathological Society, of Philadelphia, where malignant transformation of benign ulcers was demonstrable. We should keep constantly before us the unpleasant fact that one-third of all carcinomata in the human subject occur in the stomach. No other organ is subject to such constant irritation which we know to be the most potent factor in transforming simple into malignant ulceration.

Operations for cancer to avail aught must be done early and the earlier the better. Is it not wiser to choose the precancerous state, if, from the symptoms presented, it is to be feared?

The other dangers of chronic ulcers are enough to warrant either excision of the ulcer or pylorectomy, which removes the ulcer-bearing area; but, the fear of malignant disease becoming ingrafted upon a benign ulceration, in a region too prone to irritation and in a soil so markedly fertile to cancer, demands radical treatment. Pylorectomy can be followed by end-to-end approximation of stomach and duodenum, where a small portion of each has been removed, or, by closure of both with independent gastrojejunostomy. The latter is usually to be preferred on account of the disparity in size between the viscera after the necessary amount of tissue has been removed. It is unnecessary to remove more than one to one and a half inches of the duodenum, for ulcers are rarely lower down.

The mortality following pylorectomy for ulcer, has been, so far as I can learn, 1 death in 31 cases. This represents the work of five surgeons (Mayo, Robson, Park, Finney and Rodman) and included all cases reported to me. A greater number will perish from perforation, as many from hemorrhage, not to mention other dangers, as stricture, hour-glass stomach, etc., which are less direct in their effect. If the ulcer is situated on the anterior wall of the stomach, in the cardiac portion and can be easily located, is circumscribed, and reasonably free from adhesions, excision or partial gastrectomy should be done. I am conscious of the fact that in advocating this plan I am opposed by the majority of American surgeons. I also admit that the existence of other ulcers may militate against a successful result, but the tendency of such ulcers to perforation is so marked and the consequences so disastrous, that it seems to me, and has ever done so, the operation of choice. The Germans generally favor the practice, many of them doing so warmly. Jedlicka calls it the normal procedure and claims for it a mortality of 5.88 per cent. When the ulcer is excised the interior of the stomach can easily be examined for other ulcers, and if they are found can be treated directly by excision or indirectly by gastroenterostomy. Where adhesions are numerous and dense, and the stomach and upper duodenum can not be easily mobilized, particularly in subjects presumably incapable of withstanding a prolonged surgical procedure, pylorectomy and partial gastrectomy should give way to gastroenterostomy, the posterior operation always, when practicable, being given the preference. The end results after posterior gastroenterostomy without a loop, now practiced by nearly all surgeons, are much better than they were several years ago, but they are not as satisfactory as the end results of pylorectomy and partial gastrectomy. It is unreasonable to expect that drainage of a stomach can either prevent or remove pathologic changes in the gastric walls.

PYLOROPLASTY.

The old methods of doing pyloroplasty have been weighed, found wanting, and are generally discredited. The operation of Finney, which he calls "pyloroplasty," but which has generally been termed by the profession gastroduodenostomy, has greater claims for recognition. It makes the anastomosis between the stomach and duodenum at the natural site, gives a larger outlet for the gastric contents and is unlikely to be followed by peptic ulcer. It has, however, contraindications, viz.: where there is much cicatricial tissue, fresh ulceration near the pylorus, or, in cases of markedly impaired gastric motility.

Jejunostomy has been extensively advocated and practiced in Germany for the relief of gastric and duodenal ulcer, with and without such complications as perforation and hemorrhage. It had the weighty endorsement of that great surgeon, Mikulicz, who advocated it in an address before the American Surgical Association, in 1903.

It seems unlikely to me that it will displace gastroenterostomy in the treatment of non-perforating and non-hemorrhagic ulcers, as it is substituting one makeshift for another and entails an amount of subsequent care and attention which are objectionable. In the treatment of perforation and hemorrhage where the direct method of dealing with the lesion is sometimes impracticable it has advantages over gastroenterostomy: First, it can be done under local anesthesia if the condition of the patient forbids a general anesthetic; second, it places the stomach wholly and not relatively at rest as does gastroenterostomy; third, its mortality is negligible.

THE MEDICAL TREATMENT OF DUODENAL AND GASTRIC ULCER.*

ALEXANDER LAMBERT, M.D.
Visiting Physician to Bellevue Hospital.
NEW YORK CITY.

To write a short discussion on the medical treatment of duodenal and gastric ulcer would have been a relatively simple task a few years ago; to-day it is far different and by no means easily performed. The difficulty arises in some degree because we realize more clearly than formerly that the course and prognosis of acute ulcer differ greatly from those of chronic ulcer, and especially because surgery has in a few years made such advances in the treatment of gastric ulcer that we must consider when medical treatment will suffice or when it is necessary for a surgeon to consider jointly what method of treatment will give the quickest and most permanent relief to the patient.

The medical treatment of duodenal ulcer being practically the same as for gastric ulcer, what is said for one will apply also for the other.

The acute and chronic gastric ulcer can not always be clinically differentiated. Often what seems to be an acute ulcer is in reality an acute exacerbation of a chronic and long-standing ulceration. The medical treatment for the two conditions is practically the same, being modified, as medical treatment is for other conditions, to meet the varying indications presented by different individuals. There is no specific for gastric ulcer, and we must rely on the normal reparative processes of the body to effect a healing, realizing that these processes are going on in an environment unfavorable to rapid and complete healing, and often in a body far below its normal condition of health.

---

* Read in the joint session of the Sections on Practice of Medicine and Surgery and Anatomy of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

The conditions to be met with are hyperacidity and sometimes hypersecretion and stasis of food in the stomach; nausea, vomiting and pain arising from the morbid processes present in the gastric mucous membrane; the general conditions and symptoms of nervousness and anemia arising from the faulty nutrition of the body; and not infrequently the complications of hemorrhage, perforation and at times stenosis and distortion of the pylorus or other regions of the stomach.

TREATMENT.

Physical Rest.—The first essential treatment is rest, complete rest for body and for stomach. This means rest in bed and rectal feeding, followed by continued rest in bed and milk diet. The length of time necessary to remain in bed varies from a week or two in acute and mild cases to several weeks in the cases of acute exacerbations of chronic ulcer. This rest cure does not mean the absolute isolation necessary in some cases of neurasthenia, but the patients must stay in bed and give up all the daily cares and worries of household and business. They may be entertained by reading and games and short visits from family and friends and may receive letters and write or dictate short replies. They must, however, remain in bed until the pain and tenderness following the ingestion of a mild but varied diet shall have disappeared. This will not average more than six weeks.

Rectal Feeding.—As soon as the general bodily rest is assured we should begin the gastric rest by complete abstension from food into the stomach; only ice and small amounts of water should be permitted, and rectal feeding begun. Each morning there should be given a high lavage of the colon with about four quarts of warm normal saline solution. After a rest of an hour the regular nutrient enemata should be begun and given at four-hour intervals during the day. Three or at most four are sufficient for the twenty-four hours. Each enema should not exceed four ounces in amount, and may consist of eggs, milk, meat broths, or meat powders, or a combination of these; but all enemata should contain only thoroughly predigested food, being thus prepared by pancreatic extracts and bicarbonate of soda. Two hours' predigestion is none too long for the preparation of these enemata. Alcohol is not an essential part of a nutrient enema and should not be given except for some special therapeutic reason, although it is a prominent ingredient of most proprietary peptone foods. About half a teaspoonful of table salt should be added to each enema. Some preparation of opium should also be added if the enemata are not well borne, or if the rectum becomes irritable from frequent use, as the rectal feeding may thus be carried on longer than is possible without it.

After a couple of days the feeling of hunger from stomach starvation becomes blunted, but the feeling of thirst is troublesome, and besides the water by mouth, about 8 oz. of saline should be injected into the bowel about an hour after the last nutrient enema in the evening has been given. The daily colonic lavage will also supply some water, as some of it will be retained and absorbed, often half a pint or even more. The patient's sleep should not be disturbed, hence rectal feeding should be omitted during the night.

Even in mild cases rectal feeding should continue for three or four days, in more severe cases for a week or ten days, and in the exacerbations of chronic ulcer some authors recommend its continuance for twenty-one days. I believe we are more sure of a cure if even in the mildest cases we carry out for some period of time exclusive rectal feeding.

Gastric Feeding.—Gastric feeding should be begun before the rectum grows intolerant; and, as we gradually increase the gastric, we should decrease the rectal feeding. Peptonized milk in small doses, given at long intervals, should be the first food given by the stomach. By increasing the amount and diminishing the intervals the average patient at the end of a week from the time gastric feeding was begun will be getting a quart of peptonized milk in twenty-four hours, with the rectal feeding discontinued. The next step is to increase the amount of peptonized milk until two quarts or more a day are given. The use of an exclusive milk diet is often objected to on the ground of personal idiosyncrasy, or because of the bitter taste of properly peptonized milk. But, as was emphasized two years ago by my brother, Dr. S. W. Lambert, when writing on this subject, if we will use the rules of modified milk as practiced in infant feeding, varying as may be necessary the amount of [illegible] milk or cream, lime water and water, and using [illegible] sugar instead of cane sugar, it is possible to obtain a milk, raw or peptonized, which will agree with any idiosyncrasy. There is, however, no epicurean or short road to the proper and palatable peptonization of milk; and the peptonized milk which we must use, whether in the colon or stomach, requires the constant application of moderate heat for two hours for its preparation, and the product has a disagreeably bitter and unappetizing taste. As soon as the patient is taking two quarts of peptonized milk a day we may begin to reduce the degree of peptonization; and usually during the third week the peptonizing process may be reduced to half an hour or twenty minutes' duration; and, by the end of another week, milk may be given raw, though perhaps still modified in strength.

As we reduce the peptonization we may add the cooked cereal gruels of barley, wheat, or oat flour as part of the diluent. During the fourth week, with the raw milk, we may add crust free bread, butter and eggs, but not hard boiled. It is well to add only one new thing at a meal that we may judge accurately if it agrees with the patient, and be ready to discontinue it if necessary. In the fifth week one may add potatoes (baked or boiled), rice (boiled), macaroni, custards, chicken and sweetbreads. In the final or sixth week of the cure, beef, mutton, green vegetables, light salad without vinegar, cooked fruits, and simple puddings may be added.

During the period in bed the patients should receive daily alcohol spongings and baths and light massage to the arms, legs, chest and back, avoiding the abdomen, to improve the general condition. Iron in some non-irritating form, as the pyrophosphate, should be given if necessary. The average patient will be out of bed in the fifth week; in the milder cases this will occur earlier. Each day from this on should see the patient doing a little more, so that before long he may resume his ordinary existence.

The Lenhartz Protein Diet.—Lenhartz recently has expressed his dissent from the abstinence diet and gives a protein diet from the first. Starting with two eggs and 6 oz. of milk on the first day, he increases the eggs one a day until eight are taken and continues at this number; the milk being simultaneously increased three ounces a day until a quart is taken and continued at this amount. The eggs and milk are given ice cold and in teaspoonful doses. On the third day two-thirds of an ounce of sugar is given, and this is gradually increased until on the ninth day 1.6 oz. are given, and this amount is continued. On the sixth day an ounce of raw scraped beef is given, double this amount on the next day, and so continued. On the seventh day 3.3 oz. of milk cooked with rice are added and gradually increased to ten ounces on the eleventh day. On the eighth day two-thirds of an ounce of zwiebach is added and gradually increased until 3.3 oz. are given on the fourteenth day. On the tenth day 1.6 oz. of raw ham are given and continued daily in this amount. Butter is also added on the tenth day, giving two-thirds of an ounce, and double this amount on the next day and continued. Lenhartz reports 60 cases treated by this method with gratifying results.

Danger of Relapse.—Whatever the diet and method of cure we pursue, after we consider our patients cured we must always remember the danger of relapse or a recurrence of the ulcer; and we must impress on them the necessity for a prophylactic diet and mode of life which we must insist they observe for a long time. These patients must avoid frequent eating and drinking and at meal times the overdistension of the stomach with food. They must eat slowly and masticate their food thoroughly. No irritating or hard foods, such as bread crusts, fruit seeds, tough vegetable or meat fibers must be given the chance to irritate mechanically the gastric mucous membrane. Alcohol in all its forms, spiced and highly cooked sauces and condiments and even excess of common salt must be avoided lest there be a chemical irritation in the stomach. As recommended by Shattuck, from three to six months after they seem well they should take before each meal from one-half to two teaspoonfuls of bismuth subnitrate. Physical and mental overfatigue must be avoided and no journeys should be undertaken on which they can not control their diet and mode of life.

Drug Measures.—Two therapeutic measures with drugs used in connection with the dietary régime deserve special mention. One is the bismuth cure, as described by Fleiner, the other the olive oil cure of Cohnheim.

1. Fleiner's Method: Wash out the fasting stomach each morning until the water returns clear and is free from all acid reaction; then introduce through the tube six ounces of water in which 2.5 to 5 drams of subnitrate of bismuth is evenly suspended. As soon as the tube is withdrawn the patient should lie down and rest quietly in such a position that the bismuth will gravitate toward the supposed site of the ulcer. After half an hour's rest the patient should be given his breakfast. The use of the bismuth should begin with the gastric feeding and continue for two weeks. Fleiner claims for this bismuth cure both an antiseptic and astringent action, besides a reduction of the hyperacidity and a mechanical protective effect of the large dose. The result of such treatment given daily should be immediately apparent in a diminution of the stomach distress and a cessation of the pain, nausea and vomiting.

Ewald has suggested the use of the insoluble carbonate of lime instead of the bismuth; and Pariser has obtained excellent results by the use of a mixture of chalk, talcum and magnesium in place of the bismuth.

2. Cohnheim's Method: Introduce olive oil through the tube into the fasting stomach after a moderate lavage, before breakfast, in quantities of from two to four ounces; or give it before the three principal meals, without the use of the tube, in doses of one to two ounces. Cohnheim claims that the oil forms a protective coating to the ulcer, relieves the pain and vomiting and tendency to pyloric spasm, allows the patient to be fed, itself acts as a food and, finally, that it checks the secretion of acid. From his reports it would seem that the milder cases can be treated under this oil regimen by simply adding a regulated diet without any rest cure.

Krausz has recently recommended a mixture of 75 grains of sodium bicarbonate in three ounces of olive oil to be given in tablespoon doses before each feeding.

Objections.—The objections urged against the bismuth and oil cure are the use of the tube in gastric ulcer. The bismuth and oil are best given by a tube, but they can and often have been given directly by the mouth. The question of the use of the stomach tube in gastric ulcer is one not always easily decided; but, if care is observed not to distend the stomach and too great pressure is prevented by limiting the height of the funnel to the head of the patient, the risk of perforation of the ulcer is slight.

But in those cases in which there has been recent hemorrhage, or if even slight hemorrhage follows the lavage, the tube should not be used. Two cases of fatal hemorrhage have been recorded, due, it was believed, solely to gastric lavage.

Other objections to the bismuth cure of constipation and discoloration of the stools, preventing the observation of malæna from slight hemorrhages, do not hold good. Large doses of bismuth do not seem to constipate, the guaiac test for blood in the feces is not obscured by bismuth and is so easily performed that it should be a routine procedure carried out at least every few days.

Silver Nitrate and Iron Perchlorid.—The principal drugs used for their astringent action and in the hope of stimulating the ulcerated surface to cicatrize are the perchlorid of iron and nitrate of silver; of these the silver is by far the most useful. To insure all the silver reaching the stomach in an active condition the solution must be given through a tube. But, if the use of the tube is undesirable, the nitrate of silver can be given in pill form in .25 to .5 grain doses, or, better still, the same dose in solution with 5 to 10 grains of bicarbonate of soda given on an empty stomach three or four times a day. The nitrate of silver acts both as an astringent and as an antacid; for, if it is precipitated as an insoluble chlorid, it uses up in the process some of the hydrochloric acid in the stomach. Boas recommends a solution of silver nitrate, four grains to four ounces of water, a tablespoonful to be taken on an empty stomach three times a day. After one bottle of this has been taken, five grains of silver nitrate to four ounces of water are given and two bottles of this strength used. Then seven grains to four ounces are given and two bottles of this taken. The nausea sometimes occurring from this medication may be corrected by peppermint, and the slight diarrhea seen at times in the beginning of the silver cure will cease spontaneously during its further administration.

The Alkalies.—Simple antacid and some laxative action is all that is usually ascribed to the alkalies, and often Carlsbad salts are given the first thing in the morning as routine treatment; but Myer, quoting Binet in a recent communication, attributes still further action to calcium phosphate, sodium bicarbonate and magnesium which, he claims, increase the gastric secretion through stimulation. This action continues up to the point of saturation of the hydrochloric acid in all three cases, but in different degrees, the action being slight after sodium bicarbonate and very marked after magnesium. Sodium bicarbonate also stimulates the motility of the stomach through the liberation of carbon dioxid. It acts on the sensibility only when pain develops a long time after eating. And such pains do not always point to hyperacidity. Often when the pain is greatest the stomach contains no free hydrochloric acid or less than is found in a test meal which has caused no pain. These pains, therefore, are dispelled more promptly by sodium bicarbonate, which neutralizes but little acid, than by magnesium and calcium, which neutralize more acid. Binet believes that this pain which develops some time after the ingestion of food is due to pyloric spasms, which are relieved by sodium bicarbonate, because of its tendency to empty the stomach through the stimulation of the motor function.

Symptoms and Complications.—In the treatment of any given case of gastric ulcer there is often a predominance of some symptom or the occurrence of some complication which demands special treatment. The nausea and vomiting and nervous symptoms are often allayed by the treatment of the ulcer itself by diet, rest and the bismuth or oil as already described. If they recur during dietary treatment, often a change back to a simpler diet will suffice to allay them again. Antiemetics are certainly not contraindicated and are often of benefit. The pain may disappear without further medication during the gastric rest with rectal feeding, or it is often allayed by the silver nitrate and sodium bicarbonate; if not, codein, cocain or anesthesin may prove effective; the relief by orthoform in my experience has been of but very short duration. Morphin will relieve, but tends to increase the gastric acidity. Hyperacidity, whether it is a cause or an effect of ulcer, is usually present and often requires attention. Frequently the simple neutralization by sodium bicarbonate is sufficient. The use of bismuth, oil and fatty foods and irrigation by silver nitrate secure the same results. Atropin or belladonna has been used successfully to control or check the secretion of the acid.

The serious complications of ulcer are perforation and hemorrhage. Perforation is a surgical condition, and one can not emphasize too strongly the urgent necessity of an operation at the earliest possible moment after the perforation has occurred. Slight hemorrhages not infrequently occur in the course of treatment of ulcer, and demand no deviation from the lines of treatment already laid down. Hemorrhage is often the first indication that a patient has an ulcer and when the amount of blood lost can be measured by ounces immediate treatment with a period of initial gastric starvation should be instituted. If the hemorrhage, even though it has been severe, is not repeated, the regular routine treatment should go on. If a considerable hemorrhage is repeated, or if there are repeated small hemorrhages sufficient to reduce the vitality of the patient, medical and surgical treatment should be discussed immediately and the physician should not look on the surgeon as the last resort. The medical measures recommended for hemorrhage are absolute rest in bed, morphin if necessary to obtain physical and mental quietude, the swallowing of ice, cold application on the abdomen, subcutaneous injections of ergot, one or two teaspoonfuls of turpentine mixed with the white of an egg and thirty drops more after an hour if necessary, and solutions of adrenalin chlorid left in the stomach by a tube, clots in the stomach being first washed out and the stomach allowed to contract.

After a severe hemorrhage the question arises whether a saline infusion should be tried. If the heart can carry on the circulation without it, it should not be given; the blood will tend to coagulate and plug the bleeding point better without it, as the infusion may wash out the plug. If it seems necessary it may be given, but only enough to enable the circulation to go on and one should be satisfied with a relatively poor pulse. Subcutaneous injections of normal saline are better, and often sufficient fluid can be absorbed by injecting 8 to 10 oz. of saline into the colon and repeating this procedure a number of times at two-hour intervals. Vigorous cardiac stimulation is certainly contraindicated.

RESULTS.

This must suffice for the medical treatment. Let us now consider its results. Taking the statistics recently published by Dr. Geo. G. Sears,[1] of this city, and adding Leube's statistics, we have 1,203 cases of gastric ulcer in which the immediate results of treatment were 88.3 per cent. cured or improved. Considering the end-results after four or five years in 647 patients, of whom such statistics are available, there is a further history of 14.2 per cent. to 37 per cent. of relapses, some patients remaining well after the relapse, 5.2 per cent. were unimproved and 5.8 per cent. died. And, finally, we have 52 per cent. as cured, 40.8 per cent. as failures, 3.6 per cent. dead of ulcer and the rest dead of intercurrent diseases. These are not encouraging statistics, but there are undoubtedly among the failures many cases which to-day would without question be sent to the surgeon. There is no question to-day that, besides perforation, all cases of pyloric stenosis and distortion of the stomach from cicatrices or perigastric adhesions belong to surgery. If we could but know how many of the medical failures belonged to these surgical classes, we could form a more accurate judgment of the value of medical or surgical treatment in those that remained.

Leaving these statistics as they stand, physicians are to-day waiting for surgical statistics of end-results from gastric surgery. Surgical literature seems more concerned with its immediate results and the perfection of its technic than in reporting the value to the patient of the operation performed. Leaving out of medical consideration, as has just been said, all cases of mechanical obstruction and distortion, there remains to be considered acute and chronic ulcer and the question of surgical interference in hemorrhage. In young individuals, suffering in all probability from acute ulcers, medical treatment has obtained its best results; and could we separate these cases from the general mass of statistics, it is my belief we would find a high percentage of actual cures.

In reviewing the results of gastroenterostomy in these cases, Clairment[2] mentions a case of perforation and death and seven fatal hemorrhages following the operation and concludes that palliative gastroenterostomy for open ulcers gives poor lasting results and does not protect the patient from the dangers of perforation and hemorrhage. If the operation does not protect against these two dangers, it is certainly wise to wait until these dangers arise and to consider acute ulcers as belonging to medical treatment until life is threatened by the acute complication. These patients are in more danger from perforation than from hemorrhage; and, even after severe hemorrhage has occurred, medical treatment will save a greater number than surgical.

In what conditions of hemorrhage, then, can the physician turn to the surgeon with a fair promise of improving the chance for life of his patient? The impossibility of locating the ulcer and bleeding point be-

---

1. Boston Med. and Surg. Journal, vol. clii, p 369.
2. Arch. f. Klin. Chir., vol. lxxvi, 1905.

fore operation, frequently even at operation, and the high mortality of operations performed for severe hemorrhages convince us that we are not just to our patients nor to the surgeon if we consider surgery as the last desperate chance. We will make few errors if we accept Leube's indications:

1. Repeated, little, unceasing hemorrhages, sapping the vitality of the patient, absolutely indicate early surgical interference, and all the more so if stasis is also present.

2. A simple profuse hemorrhage is not a surgical indication. But if it is repeated, an operation is relatively not absolutely indicated. An operation is only indicated if the pulse and general condition of the patient justify it.

In chronic ulcer, the condition in which most medical failures occur, does surgery offer a better chance of cure than medicine? In skilled hands the mortality of gastric surgery for ulcer to-day is about the same as in medical treatment without surgery. But, until the best operation and its technic is more generally agreed on, so that the skill of a few is more widely diffused and more statistics of end-results of operations are published, physicians can not enthusiastically adopt a surgical point of view. At present we are constrained to believe that all chronic ulcers should first be treated by a most careful and strict medical regimen; if that fails and the patients can not live in reasonable comfort or are debarred from the occupations necessary for their livelihood they should then undergo surgical procedures.

Note:—The discussion on the preceding papers in the Symposium on Causes, Diagnosis and Medical and Surgical Treatment of Gastric and Duodenal Ulcer will be published next week with the article of Dr. W. J. Mayo on surgical treatment.

CEREBRAL DECOMPRESSION.

PALLIATIVE OPERATIONS IN THE TREATMENT OF TUMORS OF THE BRAIN.

WILLIAM G. SPILLER, M.D.
AND
CHARLES H. FRAZIER, M.D.
PHILADELPHIA.

(Continued from page 751).

Case 4.—Tumor of the cerebellum or cerebellopontile angle. The tumor was not found, but great benefit was obtained by a craniotomy associated with excision of a portion of one lateral lobe.

History.—C. E., aged 23, was admitted to the University Hospital, Dec. 7, 1903, and was placed under the care of Dr. Charles K. Mills who reported that his illness began several months prior to his admission to the hospital, the principal symptoms being dizziness and intense headache, starting in the occipital region and radiating toward the forehead. Five weeks later his sight began to fail and a week later some weakness of the left arm and leg were noticed.

At the time of his admission to the hospital he was suffering from the most distressing headache, which was almost constant, and from vertigo and ataxia to such an extent that it was almost impossible for him to walk alone or without support. Nor could he even stand alone unless leaning against some stationary object. His vision was so affected that he could not see gross objects and the examination of his eyegrounds revealed the presence of very marked choked discs and optic neuritis.[35]

Operation.—The patient suffered so that it did not seem justifiable to postpone operation for further and more elaborate study of the case. Accordingly within a week of his admission to the hospital a left cerebellar craniectomy was performed by Dr. Frazier. The dura was noted to be unusually tense, and on reflecting the dural flap a considerable portion of the cerebellar hemisphere protruded through the opening. It was found to be almost impossible on account of the protrusion of cerebellar tissue to make further exploration, so the operator proceeded to remove from one-third to one-half of the lateral lobe. After this was accomplished exploration was continued, but to no avail. No tumor could be seen or felt in any portion of the left cerebellar fossa.

Subsequent History.—The postoperative record of this patient is one of unusual interest because of the remarkably rapid improvement which followed. Within one week of the operation the patient's headache had entirely disappeared, his vision was restored so that he could see minute objects on the ceiling as he lay in bed and his vertigo and ataxia had almost entirely disappeared. At no time during the convalescing period was the patient's condition such as to give any concern. He was kept under observation in the hospital for a period of two months, and inasmuch as there was not the slightest return of symptoms he was allowed to go home with the understanding that he would return to the hospital if any of his cerebellar symptoms recurred.

Present Condition.—He returned to the hospital for an examination March 5, 1906. About two years and four months had elapsed since the operation and his headache, nausea and vomiting have never recurred. His vision is practically normal and he is now engaged as a laborer in the Pennsylvania railroad shops at Altoona. It should be said, however, that he occasionally has some attacks of vertigo. His weight has increased to 184 pounds and he is in all other respects apparently perfectly well (Fig 3).

Case 5.—Tumor of the cerebrum; decompression operation affording relief from headache for a period of three years.

History.—W. D., age 22, was admitted to the University Hospital, Nov. 5, 1903, having previously been under the care of Dr. W. O. Hermance. He was admitted to the service of Dr. William G. Spiller, by whom the following history was elicited: He has been suffering from headaches since 1897 and for the past nine months they have been especially severe. He has furthermore often complained of nausea, vomiting and dizziness and his sight is completely lost.

Examination.—On examination there was found to be no involvement of either the fifth or seventh nerves. The movements of the tongue and of all the limbs were unimpaired. The biceps tendon and the triceps tendon reflexes were not specially active. The grasp of each hand was normal, as was the resistance to passive movements in all the extremities. There was no involvement of the bladder or rectum and no ataxia of upper or lower limbs. There was no deviation from normal as to stereognostic conception in either hand, the gait was normal, there was no tendency to sway or fall, there was no Babinski reflex on either side and the patellar reflexes were exaggerated. There was persistent ankle clonus on the right but none on the left side. There was no word deafness and no aphasia. His sister reported that about three months previously he was unable to speak at all for at least an hour, but that this was the only time he ever entirely lost the power of speech. He was at times delusional, and imagined he was being put into a hole. He had what he calls "sinking spells" in which he felt weak and his heart stopped beating.

About six months prior to his admission to the hospital he complained of stiffness (?), probably weakness, in the back, left side of the neck, in the left arm and left leg. He had never had any convulsions, but from April to August of the present year his whole body would get stiff for about half an hour. His memory is better than it used to be. He listens attentively to what is read to him and remembers it better than the persons who read it. The headache had been frontal and bilateral until February of this year and it seemed to have become more localized to the left temporal region.

Dr. Thorington, who had examined his eyes, reported that there were no ocular palsies, but choked disc in both eyes.

---

[35] This is Case 4, Dr. Mill's paper, "The Diagnosis of Tumors of the Cerebellum and Cerebellopontile Angle, with Special Reference to Their Surgical Removal," New York and Phila. Med. Jour., Feb. 11 and 18, 1905.

slightly more advanced in the left. There had been numerous hemorrhages, large and small, old and recent. Examination of the urine on one occasion prior to his admission to the hospital revealed a few hyalin casts and a small quantity of albumin. Since the examinations at the hospital, after repeated examinations, only on one occasion was a suspicion of hyalin casts: at no time was there albuminuria.

Nov. 5, 1903, Dr. Shumway made the following ophthalmic report: No light perception. Right eye, atrophy following choked disc. Nerve head much swollen, veins tortuous, no hemorrhages. Left eye, nerve head still more swollen, some atrophy, hemorrhage on the nasal side of the nerve, numerous white points of exudation.

Nov. 6, 1903: It was noted on this date by Dr. Spiller that pupils were dilated, there was no reaction to light and no ocular palsies. The ophthalmic reflex was present on each side. Patient closed the eyelids firmly and wrinkled the forehead well on both sides, the tongue was protruded straight, not wasted and there were no fibrillary tremors. His hearing was apparently not affected. He swallowed without difficulty. There was some tenderness to percussion over the left temporal region. There was no word deafness nor motor aphasia.

Upper limbs: Movements of the upper limbs were free at all points. The biceps and triceps reflexes hardly obtainable on either side. Grasp of each hand and resistance to passive movements were normal. Sensation for touch and pain normal in all parts of the body, and the sense of position and stereognostic conception was unimpaired. There was no wasting.

Lower limbs: Voluntary power normal, no hemiasynergy on either side and no wasting of the lower limbs. The sense of position was normal on both feet. The patellar reflexes were distinctly exaggerated on either side and more prompt on the left side. There was a slight indication of ankle clonus on the right side, although clonus was not as persistent as at the last examination. There was no clonus on the left side. The Achilles tendon reflex was exaggerated on each side, but more so on the left. The patient stood well with his feet together and the eyes open or shut. His gait was normal, although it was uncertain on account of his blindness. There was no Babinski on either side.

Further examination of the other organs including those of the thorax and abdomen proved negative.

Operation.—Craniectomy was performed by Dr. Frazier under ether anesthesia and an osteoplastic flap was reflected in the left frontal region. It was noted at the time that the skull and the dura were abnormally thick. There were no adhesions between the dura and the skull. Pulsation was visible and the brain did not bulge when the dura was reflected. Especially at the superior and anterior aspect of the opening the consistency of the brain seemed abnormally soft and an exploratory needle was introduced in various directions, but with negative results. The dural flap was replaced with sutures and the bony portion of the osteoplastic flap was removed for the purpose of relieving intracranial pressure.

Subsequent History.—The patient remained under observation in the hospital until Jan. 27, 1904, at which time it was noted that he had had no headaches since Dec. 28, 1903. His general condition had improved and he had gained in weight and strength. The last ophthalmic examination prior to his discharge from the hospital, made Jan. 1, 1904, notes that the nerve is becoming more and more atrophied.

April 15, 1904: The patient was admitted to the hospital again with a history of having had no recurrence of headache after he had been discharged; from this time on the headaches recurred generally on the right side of the head in the occipital region, accordingly it was deemed advisable to perform a second palliative operation and on April 16, 1904, Dr. Frazier performed an osteoplastic operation, reflecting a flap from the right temporo-parietal region, removing a flap 10 cm. broad and 7 cm. wide. It was noted at the time that there was no visible pulsation and that the brain appeared to be under considerable tension. The bone at the margin of the upper aspect of the opening appeared abnormally dark in color and unusually porous. An exploratory needle was introduced into the pons at about the middle of the opening but no fluid was detected.

Following the operation the patient complained for a few days of a severe supraorbital neuralgia which was attributed to the pressure which had been effected by the use of a pneumatic tube applied for the purpose of controlling hemorrhage. The patient was discharged from the hospital April 28, about two weeks after the operation. His headaches had not entirely disappeared, although they were comparatively mild in character and the patient no longer required hypodermic administration of morphia to which he had been accustomed heretofore.

Present Condition.—May, 1906: The last observation was made 2 years and 6 months after the first operation and 2 years and 1 month after the second operation, and at this time it was reported that the patient had enjoyed almost absolute relief from his headaches. He is able to perform the duties connected with the management of a cigar store and with the exception of his loss of eyesight he appears to be entirely well. The optic neuritis was so far advanced when the patient was first seen that the possibility of saving his sight was out of the question.

CASE 6.—Tumor of the cerebrum.

Patient.—M. B., aged 17, was referred to the University Hospital by Dr. R. Ross Jordan, Tyler, Clearfield County, Pa., and transferred from the service of Dr. Charles K. Mills, October 9, 1904.

History.—He was struck on the back of the head 9 months ago. He was not unconscious at the time he fell. About an hour later he became dazed, walking around aimlessly and remaining in this state for about half an hour. On Jan. 28, 1904, he was seized with shortness of breath, succeeded by tingling in the ears, and fell to the ground. It was said that during the convulsion his eyes were turned from side to side, and that the whole body with the exception of the hands and wrists fell into a state of spasm, lasting from five to seven minutes, with frothing from the mouth. Since that time he has had five attacks of this character, the latter one having been preceded by violent occipital headache and vomiting.

Examination.—He has marked optic neuritis, complains of intense headache and occasionally vomits. There is no hemiasynergia on either side. No paralysis of either facial nerve, the masseter and temporal muscles contracting well on either side. Sensation for pain and touch is equal on both sides, so that there is no involvement of either the sensory or motor root of the fifth nerve. The extraocular movements are normal, but there is a lateral nystagmus when looking from either the right or left. The tongue is protruded straight, moves freely and there are no tremors. The head is not tender to percussion.

Upper Extremities: Grasp of each hand is equal and strong; sensation for pain and touch normal in each upper limb and it is the same on both sides. Stereognostic perception is normal in both hands. Biceps and triceps tendon jerk are not distinct in either side. There is no muscular atrophy. Resistance to passive movements is normal in both upper extremities. In the lower limbs no hemiasynergia. Resistance to passive movements normal, patellar reflex normal on each side, and there is no Babinski reflex. Sensation for touch and pain are the same on both sides, gait and station are normal wih the eyes open or shut. There is not the slightest trace of hemiparesis or disturbance of sensation on the left side.

Ophthalmologic Report.—From the service of Dr. de Schweinitz: Ophthalmic diagnosis hemianopsia. Pupils react normally to light and accommodation, the muscle balance normal; eyegrounds, media clear; O. D. marked optic neuritis, 5 D. no change in macula, O. S. swelling of disc 5 D, a few small fresh hemorrhages in the fundi. No change in the macula.

Operation.—Dr. Frazier, Oct. 10, 1904. Inasmuch as the symptoms pointed entirely to a lesion in the occipital lobe, an osteoplastic flap was reflected, exposing this region. The dura exposed in the opening presented a mottled appearance as though the seat of an organized traumatic or inflammatory exudate. There was slight visible pulsation and there seemed to be considerable tension. When the dural flap was reflected the brain immediately bulged through the opening even beyond the level of the scalp. And from the opening of a jet of yellowish-red fluid spurted three or four inches. About 45 c.c. of fluid were evacuated in this way. In order to close the defect it was necessary to reflect a flap from the pericranium inasmuch as the brain still bulged considerably through the opening. This was taken from the section of bone contained in the flap and the bone itself was removed. The wound was closed with interrupted silkworm gut sutures and drain introduced through counter openings.

Subsequent History.—October 13: Since the operation the headache has entirely disappeared and the patient is now able to see objects which he could not before the operation.

October 24: On the date of his discharge from the hospital it was reported that the patient felt better than he had for some months and that the vision of both right and left eyes had improved.

R. E. V. before the operation 6/30, at the present time 6/22.

L. E. V. before the operation 6/30, at the present time 6/15.

There is still a left hemianopsia and the swelling of the discs has decreased from 5 to 3 D.

Dec. 21, 1904: The patient was readmitted to the hospital. He returned to the hospital chiefly owing to the fact that the hernia cerebri had increased and especially for the past two weeks his vision had been failing. During the past two months he had gained forty pounds. Examination of the eyeground showed that the choked disc had entirely subsided, t that there was marked optic atrophy. There was left eral hemianopsia for light only.

Dec. 23, 1904: The original field of operation was exposed and the dura was found intact. On reflecting the latter a canula was introduced and immediately a large quantity of blood-stained fluid escaped. Immediately after the evacuation of the fluid the hernial protrusion collapsed. The question arose at the time of the operation as to whether we were dealing with a cyst of the occipital lobe or the dilator horn of the lateral ventricle. No evidence could be detected of a neoplasm in the neighborhood of the operative field. The wound was closed in the usual way.

December 29: Patient has made a satisfactory convalescence from the operation. There has been a free discharge of cerebrospinal fluid from the wound, requiring reinforcement of the dressing from time to time.

Jan. 27, 1905: The patient was discharged from the hospital to-day, the wounds having healed *per primam* throughout. The hernia was not so prominent as it was before the operation. The patient's condition, with the exception of his impairment of vision, is entirely satisfactory. The optic atrophy which was discovered after the choked disc had subsided of course precludes the possibility of his recovering his vision. In a letter received from him February, 1906, the patient reports that he is feeling very well, has had no bad spells, and is now in attendance at a school in Pittsburg, Pa.

CASE 7.—Tumor of the left lateral lobe of the cerebellum. Decompressive operation, followed by striking improvement.

History.—Inasmuch as this case was reported in full,[36] it will be necessary to refer here only to the salient points.

Patient.—F. M., aged 10, was referred to Dr. Frazier's service at the University Hospital by Dr. D. J. McCarthy, March 7, 1904. The essential symptoms in the case were a gradual increase in ataxia and pronounced headache, vertigo and vomiting. There was a marked degree of choked disc on both sides.

Operation.—March 13, 1904: Dr. Frazier removed the bone overlying the left lobe of the cerebellum and proceeded to explore the hemisphere for a tumor. Exploration failed to reveal the presence of a tumor and before closing the dura, one-third of the cerebellar hemisphere was removed. The effects of the operation were most gratifying. At his discharge from the hospital on March 27 his condition was noted as greatly improved. His whole disposition had changed; he was bright and cheerful and complained neither of headache nor vomiting.

Second Operation.—November, 1904, the patient returned to the hospital because of the recurrence of some of his symptoms. On the following day the cerebellar fossa on the affected side was explored and an infiltrating tumor about the size of a walnut was found and removed.

The value of the palliative operation in those cases in which the tumor can not be localized is well illustrated by this case. Between the date of the palliative operation and the time at which the tumor was finally found and removed the patient had been comparatively free from any subjective disturbance.

CASE 8.—Suspected tumor of the cerebellum. Decompressive operation including removal of a portion of one cerebellar hemisphere, followed by considerable relief as to the vision, headache, vomiting and vertigo. Death of the patient 7 months later. No autopsy.

Patient.—P. K., aged 15, entered the neurological wards of the University Hospital in the service of Dr. William G. Spiller, May 9, 1905.

History.—Eight months ago the patient complained of headache all over the head associated with vomiting. The attacks of vomiting were irregular, sometimes twice a day and again not oftener than twice a week; in the interval, however, he was occasionally nauseated. He complained for some time also of dizziness and difficulty in locomotion. He had never had any convulsions.

Examination.—By Dr. Spiller, May 12, 1905. Conjunctival reflex is distinctly impaired on the left side; corneal reflex normal, both cornea and conjunctiva are normal on right side. Movements of the face are normal on both sides and there is no involvement of motor or sensory root of the fifth nerve. Sensation for touch and pain is not impaired. Movements of the eyeballs in all directions are somewhat impaired, and somewhat inco-ordinate. Tongue is protruded straight; there is no atrophy and there are no fibrillary tremors. Hearing for the voice appears to be normal in each ear; speech and intelligence normal. When sitting up the patient holds his head fairly erect, possibly with a little tendency to incline it to the left.

The grasp of each hand is normal, finger-to-nose test normal on each side. Neither biceps tendon reflex, triceps tendon reflex nor the wrist reflexes are distinct on either side. Sensation for both touch and pain normal in both upper extremities. There is no wasting in the upper extremities.

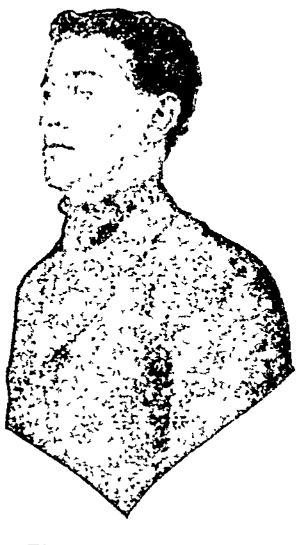


Fig. 3.—Showing the general robust appearance of patient one and one-half years after decompressive operation for tumor of the cerebellum (Case 4).

In the lower extremities the voluntary movements are normal, and there is good resistance to massive movements. The patellar reflex is very prompt, even exaggerated on the right side, but not quite so prompt on the left side. There is no ankle clonus. The Achilles jerk on the right side is prompt, but not so prompt on the left side. There is no Babinski reflex on either side, the smaller toes being drawn downward, the great toes remaining stiffer. Sensation for touch and pain is normal in each lower extremity, the cremasteric reflex is exceedingly prompt on the right side and prompt, but not so markedly so on the left. The musculature of the lower limbs is poorly developed, the patient has some difficulty in standing. On standing with his feet close together, even with his eyes open, he usually falls to the left and backwards. His gait is very ataxic with a marked tendency to go backward, and to the left. Hemiasynergy is not present on either side.

Provisional diagnosis, cerebellar tumor, more likely on the left side because of the tendency to hold the head to the left, to fall to the left and backward and because of the impairment of the left conjunctival reflex, and of the less degree of exaggeration of tendon reflexes on the left side.

May 12, 1905: Ophthalmic report by Dr. Shumway. Completely blind in the right eye, left vision about 1/100. Both pupils are widely dilated. The right pupil does not respond to light and the left responds sluggishly. There is some limitation of the movements of the eyes, particularly of inward movement, the left eye not approaching within 5 mm. of the inner angle; the movements are very jerky in character. There is a high-grade optic neuritis of the right eye which is going into secondary atrophy of the nerve. The veins are very tortuous and there is a small hemorrhage on the outer side of the nerve and an elevation of 6 D. In the left eye there is also an optic neuritis and of a milder degree with an elevation of about 4 D. The left nerve is also becoming atrophic. The patient was referred to the surgical wards.

---

[36] See Dr. Mills' paper, "The Diagnosis of Tumors of the Cerebellum and Cerebellopontile Angle, especially with Reference to Their Surgical Removal," pp. 91-96, New York and Phila. Med. Jour., February 11 and 18, 1905.

Operation.—May 17, 1905. Under ether anesthesia Dr. Frazier performed a decompressive operation. The exposure of the left cerebellar hemisphere was attended with unusually free hemorrhage particularly from those sinuses which have been described on previous occasions as existing in the occipital bone in the neighborhood of the occipital protuberance. When the dura was opened the cerebellar tissue bulged considerably but on the surface of the hemisphere and to a depth of about one inch, no pathologic condition could be demonstrated. About one-third of the hemisphere was removed and the cerebellopontile angle exposed but with negative results. A very good exposure of the seventh and eighth nerves was obtained, which were demonstrated to the eight or nine physicians who were witnessing the operation. No further exploration was made and the wound was closed.

Subsequent History.—May 6, 1905. The patient reacted from the effects of the operation. Dr. Shumway reports that the optic neuritis had subsided very much, the apex of the swelling in the right eye is now only 3 D. as compared with the 6 D. before the operation, and the left eye 2 D. as compared with 4 D. before the operation. The nerves are becoming somewhat atrophied. The patient's vision has improved particularly in the left eye, so that he can count figures at a distance of two feet.

July 19, 1905: Reported to-day that the patient can walk around the ward without any assistance, although still somewhat unsteady, but, however, no tendency to fall in any particular direction. He now has no headache, and his vision has been so improved that he is able to distinguish faces and objects.

No opportunity was afforded to make any observations after the patient was discharged from the hospital, and in answer to a letter of inquiry written in January, 1906, we learned that the patient had died December 24, 1905.

Case 9.—Suspected tumor of the cerebellum in which a decompressive operation entirely relieved the subjective symptoms.

History.—S. L., aged 20, patient of Dr. T. H. Weisenburg and Dr. M. Radcliffe was admitted to the University Hospital, Oct. 25, 1905, with the following history.

Family History.—Father died of pneumonia. Mother is living and well. Two sisters and six brothers all in good health. No history of nervous disorders, tuberculosis, renal disease, cardiac disease or neoplasm.

Social History.—Patient was born in Austria and came to this country when 3 years of age. Engineer by occupation. Uses alcohol and tobacco in moderation. Patient has a small urethral discharge at the present time of one month's duration. There is no syphilis.

Previous Medical History.—Patient had measles during infancy; otherwise he has always been in excellent health. He was well until one year ago, when he began to experience nausea, followed by vomiting with pain of a severe character, starting in the nape of the neck and shooting upward to the top of the head. At first these attacks were rather frequent, occurring every day or every other day, but they have greatly decreased in frequency. Two months ago the sight in the left eye began to fail and now he can distinguish only shadow and light. At about the same time he noticed that he was deaf in the left ear. On attempting to walk he feels giddy and staggers. This began about three or four months ago and has not increased much since then. Turning the head from side to side and backward causes some pain, but not severe. Lifting causes severe pain with blurring of vision. No motor paralysis.

Examination.—By Dr. Weisenburg. Station with eyes open and shut good. Gait with eyes closed good, though occasionally he has tendency to walk either to right or left.

Eyes: Pupils dilated with atropin. Convergence impossible with left eye, i. e., on attempting to look at nose, the left internal rectus is weakened. Associated ocular movements to right and left are perhaps affected; i. e., he can look either to right or left to the normal extent, but in a short time the eyeballs have a tendency to jerk back toward the median line. Upward and downward associated movements are normal. No diplopia. Ophthalmoscopic examination shows marked choked disc on both sides, especially the left. Both optic nerves are much swollen and hemorrhages are profuse. The appearance is that of an albuminuric retinitis.

The fifth, the seventh and the twelfth nerves are normal. Hearing seems to be diminished on the left side. There is no trouble in eating; no dysphagia; no dysphonia. Memory is good. Both upper and lower limbs are normal in form. Reflexes and sensation are normal. There is no ataxia on either side. No involvement of bladder or rectum. No hemiasynergy. Touching conjunctiva on either side does not elicit any movement of eyeball while corneal reflex is present. There is no Babinski. The results of the examination of the nose, throat and larynx by Dr. Grayson and of the sense of hearing by Dr. Randall were entirely negative.

Operation.—On Oct. 26, 1905, a decompressive operation was performed by Dr. Frazier which consisted in a suboccipital craniectomy, the bone overlying the left cerebellar hemisphere was removed. There appeared to be an increased amount of intracranial tension and the dura did not present its normal pale bluish color, but in most places and particularly in the upper and inner angle it was a yellowish opaque and dotted here and there with whitish-yellowish specks. The dura was not incised.

The operative recovery was entirely uncomplicated. The wound healed throughout *per primam.*

October 31: Dr. de Schweinitz made an ophthalmic examination and reported a right choked disc plus 10 to 11 D. left choked disc plus 9 D. and no fresh hemorrhages.

November 3: Dr. de Schweinitz reports O. D. choked disc plus 11 D., some fresh hemorrhages. Vision 6/22. O. S. choked disc plus 9 to 10 D., but more contracted laterally; fresh hemorrhage.

Dec. 23, 1905: The patient was discharged from the hospital to-day. Since the operation his vision has improved considerably.

December 22: Dr. de Schweinitz reported as follows: O. D. 6/12, subsiding neuritis plus 7 D. O. S., subsiding neuritis plus 7 D. It will thus be seen that the choked discs have subsided about 4 diopters since the operation.

Jan. 29, 1906: Patient reported at the hospital for examination and said that there had been no headache, nausea or vomiting. O. D. the disc can be distinctly seen, slight swelling of the edges, only about plus 1 D. O. S. disc apparently normal. This is one of the most striking effects on choked disc after decompressive operations that we have observed and is particularly interesting in that the results were obtained without opening the dura.

May 29, 1906: The patient now has some headache, but much less than he had before the operation. He is occasionally dizzy. The patellar reflexes are a little increased. Gait and station are good even with eyes closed. Dr. de Schweinitz reports: Subsiding optic neuritis.

R. E., marked loss of capillarity, especially temporal half, disc swollen 5 D. (eyeground 3 D) hence actual elevation 2 D: vessels shrinking, some exudate in macula. L. E., well-marked subsiding neuritis and postpapillitic atrophy.

Case 10.—Tumor of motor region.

History.—P. S., aged 25, was referred to Dr. Spiller by Dr. de Schweinitz.

Family History.—Father and mother living and well. No history of neoplasm, tuberculosis, liver or kidney disease. Cousin became insane and committed suicide. Mother says the whole family is very nervous.

Social History.—Went to school until 18 years, then studied law for three years, but was forced to give it up on account of his nervous condition, then became a fireman on a locomotive. Smokes to excess; drinks alcohol in moderation.

Note from Dr. de Schweinitz: "Double optic neuritis (choked disc) visual fields normal. No palsy of exterior muscles. Choked disc about 5 diopters."

Up to 8 years of age had almost every infectious disease. When 11 years old he went to bed well one night and awoke blind and remained so for four months (treated at St. Agnes Hospital). Sight gradually returned. According to his mother, "eyeballs were solid red, like clotted blood." To 17 years of age he had fair sight and did not wear glasses. At 17 he began to be very nervous, and it was then that he began to take "weak spells," About once a month he would suddenly become weak, his knees would give way and he would fall to the ground, but would not lose consciousness. These fainting spells disappeared after a while and have not been present since he was 18 years of age.

At 21 years of age he again wore glasses. His sight gradually diminished and he suffered severe pain in his eyes, especially behind the eyes. Temporary attacks of blindness lasting a minute or a few seconds occurred sometimes. He has always been a heavy smoker since he was 7 or 8 years old. He has averaged twenty to twenty-five cigarettes daily and also a pipe and a cigar a day. He had gonorrhea three years ago, but has not had a chancre or other venereal sore. He has been always subject to headaches, but within the past year pain has been almost constant, worse at night, preventing sleep, and associated with attacks of vertigo, weakness, nausea and vomiting. The headache is chiefly in the vertex, but sometimes occipital and above the eyes. He had a severe fall and struck on the back of his head when a child. Weakness disappears at will; if he "were to give in to it he would go in a heap." He has never had convulsions, but says that several times he has had attacks in which the whole left side, arm and leg, especially the leg, became numb, "as though dead"; the arm was only a little affected. He has no paralysis or paresis anywhere. He was a fireman on a locomotive three years and was so nervous that he gave up the work. Every little noise would make him jump, and he was always expecting something to happen, "lost his nerve," as he expressed it. Masturbated freely before 16 years of age.

Examination.—Sensation seems normal everywhere and to every form of stimulation, and there is no astereognosis and no loss of muscle sense. Ocular movements are good. Slight nystagmoid movement is seen on extreme lateral excursion, especially to the left. Reflexes are normal. There is no Babinski and no ankle clonus.

Cardiac condition: Irregular heart action without marked accentuation of either aortic or pulmonic sounds.

Patient states that the attacks of stiffness of left lower limb previously mentioned are usually preceded by much greater headache, a "sensation of something inside expanding and bursting out." They frequently occur at night, and in them the left leg becomes very rigid and is drawn across the right, but it can be voluntarily moved. The left arm is to a less extent involved and still less the left face. During the attack consciousness persists, but the whole left side feels as though "dead." He has almost constantly a blowing tinnitus aurium; only on the right side. He quit railroading in November, 1905, and since then has had only one or two attacks of spasm; previously had one or two weekly.

March 20, 1906: Yesterday morning in getting out of bed he had headache. Between 10 and 12 o'clock he became weak in his knees, but did not fall. In the afternoon he vomited and complained of intense headache and became unconscious. The left arm was flexed on the forearm and was stiff. The left lower limb was stiff and probably the left side of the face was affected. He was unconscious all night and very noisy and hard to restrain. This morning he is perfectly conscious, but in an agony of headache, crying out at times and tossing himself about in bed, clutching at any one near him and begging for relief. There is no motor weakness in any of the limbs, but he has some slight disturbance of sensation in the right hand. Stereognostic perception, the sense of position and tactile sensation are normal in each hand. The spasms which he has had have been in the left side and have always been tonic (never clonic). The patellar reflex is exaggerated on the left side and possibly slightly so on the right. Achilles tendon reflex is not exaggerated and there is no Babinski reflex.

Operation.—By Dr. Frazier, March 20, 1906. Under ether anesthesia the usual motor opening was made, the flap measuring 3½x4 inches in width and length. When the osteoplastic flap was reflected it was noticed that at a point about 2½ inches from the front of the posterior margin of the opening and just below the superior opening the dura had already been punctured by the neoplasm, and immediately overlying this point the bone had been almost entirely worn away by the tumor. There was no visible nor palpable pulsation. The exposed dura was of a greenish hue and gave the appearance as though there were beneath it numerous large vascular channels. There was a peculiar soft fluctuating sensation communicated to the examining hand. An exploratory incision was made in the dura, beginning at the point where it had ruptured spontaneously. A tumor was immediately exposed, apparently of the infiltrating character and filled with large vessels. Its removal was considered impracticable. The dural incision was closed and the lower half of the bone contained in the flap as well as considerable portion of the temporal bone was removed. The wound was closed as usual with interrupted silkworm gut sutures and the drainage introduced through two counter openings.

March 21: The headache, of which he complained so bitterly before the operation, has entirely disappeared. Patient can move his left leg, but has no movement in his left arm, forearm or fingers. Sensation is not impaired. There is some impairment of the left facial nerve.

March 22: The movements of the left lower limb are still unimpaired. The left upper limb is completely paralyzed, as is also the lower part of the left side of the face, the muscles supplied by the superior branch of the facial nerve being weak. The tongue deviates a little to the left when protruded. The left biceps and triceps reflexes are not distinct; the left patellar reflex is exaggerated. There is no ankle clonus on the left side.

Subsequent History.—March 23: Drainage removed to-day and wound in excellent condition.

March 25: Dr. de Schweinitz reports that in the right eye there is optic neuritis, a greenish-white swelling confined to the disc and covered with numerous particles, probably cholesterin. There are no hemorrhages. Swelling of the disc is plus 3 D. In the left eye the conditions are precisely similar swelling of disc plus 4 D. Vision O. D. 4/25, O. S. 4/12.

March 26: Patient's general condition is excellent. The dressing has been removed and he is up and about the ward.

March 27: For the first time the patient can lift the left arm and raise his hand over his head without any difficulty; he can flex his fingers.

March 30: Patient still has some weakness in the lower side of the face; the left upper arm is still weak, although power is gradually returning. Tactile sensation, sense of position, stereognostic conception are normal in the left hand. He is able to walk unaided.

April 1: Dr. de Schweinitz reports, under date of to-day, optic neuritis in right eye plus 3 D., in left eye plus 4 D. R. E. V. equals 4/20 (?), O. D. equals 4/10 (?). Vision is very much blurred. Evidence of temporary blindness.

April 4: The patient was discharged from the hospital today, having had absolutely no recurrence of headache.

(*To be continued.*)

A New Clinical Method of Determining Blood in the Urine.—Klimoff announces a new technic in *Russky Vrach.*, No. 16. 1906. The urine to be examined is mixed with any quantity of hydrogen dioxid and then is added a small amount of aloin powder. On shaking the mixture it turns purple. Slightly heating hastens the reaction. If the urine contains pus or is alkaline, the reaction will always be positive, whether there is blood in the urine or not, therefore the urine should be previously made acid by adding some acetic acid. The presence of albumin does not interfere with the reaction, but that of bile pigments does. With these limitations the test is reliable and sensitive.

New Appliances

TREATMENT OF FRACTURE OF THE INFERIOR MAXILLA, WITH DESCRIPTION OF A SPLINT.*

GEORGE MORRIS DORRANCE, M.D.
Assistant Demonstrator of Surgery at the University of Pennsylvania; Surgeon to the Out Patient Department of St. St. Agnes Hospital.
AND
NORMAN L. JAMESON, D.D.S.
PHILADELPHIA.

Fractures of the lower jaw are divided into fractures of the body, the ramus, the angle and the condyloid and coronoid processes. The most frequent variety is fracture of the body at the mental foramen; frequently the fracture is double, being two of the same variety or a combination of two different varieties. Numerous mechanical devices and operative procedures have been advanced for the treatment of these fractures, but, if one may judge from the numerous articles which appear each year, none give entire satisfaction. No one apparatus or operation will be satisfactory for all varieties of fracture of the inferior maxilla. The treatment of these fractures with the use of a chin cup and a Barton's bandage is antiquated and entirely unreliable, as well as being very uncomfortable. To be systematic, we will take up the different varieties in turn.

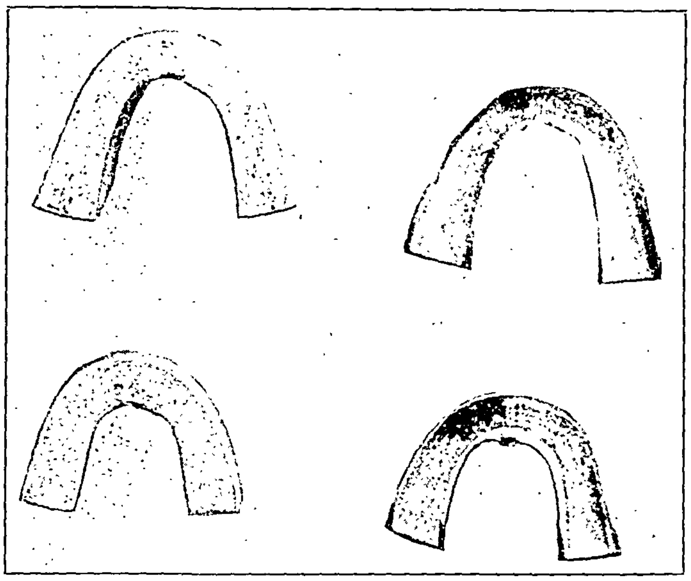


Fig. 1.—The mouth-pieces in two sizes.

FRACTURE OF THE BODY WITHIN THE ALIGNMENT OF THE TEETH.

Fractures of this variety may be treated with an interdental splint and good results obtained. The disadvantages of this method are: 1, It requires the assistance of a dentist; 2, the mouth can not be kept clean; 3, the patient can take only liquid food; 4, articulation is impossible. The Matas splint has been used by us and found very much superior to any other apparatus. but it too has several objectionable features: 1, The mouth piece bends at the slit and allows the fragments to get out of alignment; 2, the chin cup can not be adapted to the different variations in shape of the inferior maxilla; 3, all the pressure comes on the symphysis instead of being equally distributed along the body; 4, the splint extends about four inches in front of the teeth and on that account the bone is liable to be refractured; 5, the wearing of a Barton's bandage is necessary to keep it in place. To overcome these defects, we have devised the splint shown in the illustrations.

DESCRIPTION OF THE SPLINT.

This splint is constructed on the principle of a clamp. It consists of a mouthpiece, chin cup, horizontal and vertical bars and a tube which fits over the vertical bar. The mouthpiece is a horse-shoe-shaped tray resembling the impression trays used by dentists. On the center of the inner or lingual surface of the plate is a small slot for the reception of the horizontal bar. The trays are made in two different sizes (Fig. 1). From these a selection can be made to fit any jaw by ben ing the plate slightly. The chin cup is a perforated aluminu Levis cup which extends from the symphysis to the angle it is attached at the tip to the upper end of a hollow squa tube by a swivel and at its base to the lower end of the squa

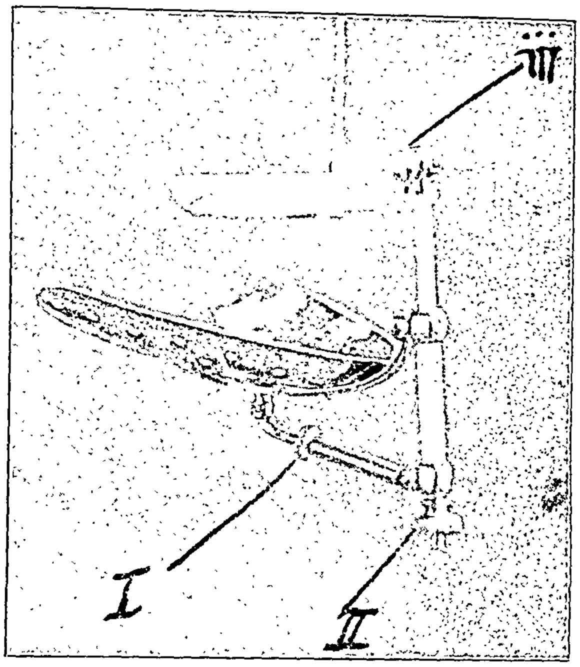


Fig. 2.—A splint for fracture of the inferior maxilla.

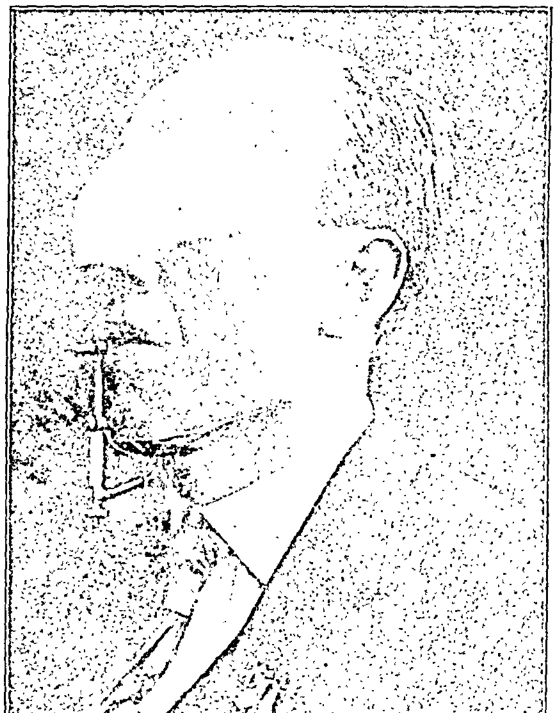


Fig. 3.—The inferior maxilla splint in place.

---

* Read before the Philadelphia County Medical Society.

tube by a jack screw, by which the chin cup can be regulated to fit any jaw from angle to symphysis (Fig. 2). The square tube fits over a square rod with a thumb screw at its lower end to regulate the pressure. The vertical square rod is pierced at its upper end by the horizontal square rod. The distance of the vertical rod from the teeth is regulated by a thumb screw at the junction of these two rods.

APPLICATION OF THE SPLINT.

The teeth should be cleaned with peroxid of hydrogen and washed with boric solution. The teeth on each side of the fracture, if they are present, should be wired together with fine brass wire to keep the fragments in apposition while the splint is being applied. Then the mouth piece, which corresponds to the size of the jaw, is bent until it accurately fits the alignment of the teeth. This plate with the horizontal rod in place is filled with modeling compound which has been softened by immersing it in hot water and is pressed down on the teeth. A few drops of cold water applied to the plate will harden the modeling compound. The chin cup and the vertical bar are placed in position and thumb screw No 1 (Fig. 2) is regulated until the chin cup fits the jaw. Then thumb screw No. 2 is regulated until the chin cup and mouth piece are held firmly together. Finally thumb screw No. 3, at the junction of the two rods, is tightened to keep the chin cup from slipping forward (Figs. 3 and 4).

The chin cup should be removed once or twice a day, the chin rubbed with alcohol and dusted with talcum powder, then the chin cup reapplied. The mouth piece should be removed and reapplied with new modeling compound every few days so as to keep the mouth clean. The pressure on the chin should be regulated so as not to cause a pressure sore.

This splint has been in use in eight cases. In every one the alignment of the teeth has been perfect.

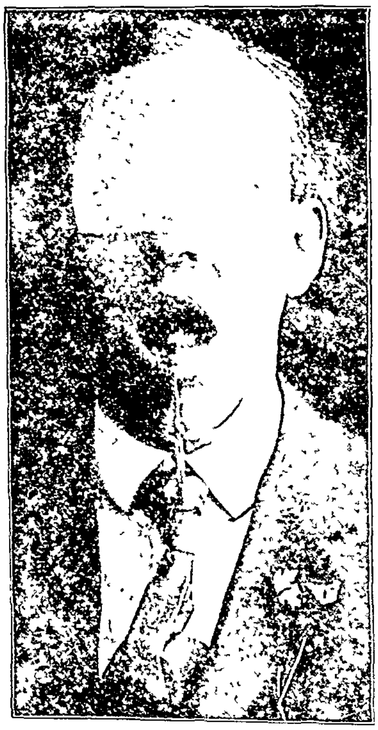


Fig. 4.—The inferior maxilla splint in place.

FRACTURES OF THE RAMUS, THE ANGLE, THE CONDYLOID AND CORONOID PROCESSES.

An interdental splint is the only appliance that will hold the fragments of the above fractures in place. Of the numerous varieties of interdental splints the one shown here is the best. The variety of interdental splint which separates the upper and lower jaws one-half an inch is only mentioned to be condemned. The use of said splint is frequently followed by inability to approximate the upper and lower jaws by reason of union taking place at an angle. When the interdental splint of German silver (Fig. 5) is used, the assistance of a dentist is required.

METHOD OF MAKING THE INTERDENTAL SPLINT.

Impressions of both sets of teeth are taken in plaster-of-Paris; from these impressions zinc dies are made, over these dies German silver plates are swaged for the upper and lower jaws. The plates are trimmed to fit around the necks of the teeth and placed in the mouth on the upper and lower teeth with a little wax between them and the jaws are closed in their proper relation. The mouth is then opened and the plate removed with the wax, holding them in apposition while being soldered together. After the teeth have been cleaned and dried, the splint with both the upper and lower plates filled with cement of a creamy consistency is placed on the upper jaw and the lower pressed up in place. A Barton's bandage should be worn until the cement is hard. The splint should be removed at the end of three weeks, the mouth cleansed and the splint put back for one week more. It is not necessary to extract a tooth to enable the patient to swallow as he can very readily take liquid food through and around the teeth.

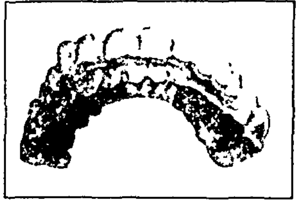


Fig. 5.—An interdental splint in German silver.

The splint shown in Figure 2 is manufactured by the Valzahn Company of Philadelphia.

MODIFICATION OF THE ESMARCH CHLOROFORM INHALER.

W. P. MEGRAIL, M.D.
WHEELING, W. VA.

This modification of Esmarch's inhaler possesses the following advantages:

1. A simple, firm and rapid method of fastening gauze or other material to the Esmarch frame by fitting the ring inside of the frame instead of on the outside, as in the old model.

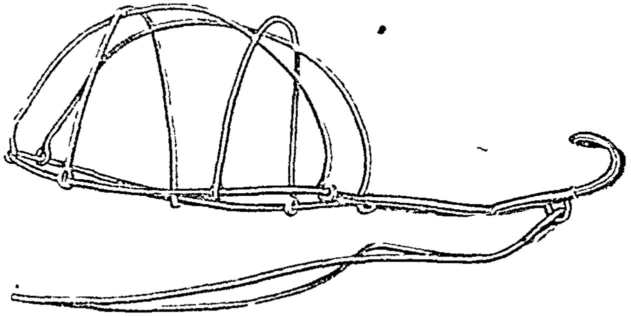


Figure 1.

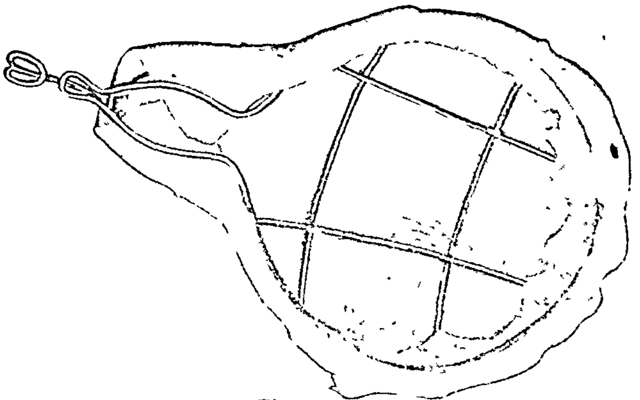


Figure 2.

2. The ring and frame are so fastened together that one can not be lost from the other, nor can they in any manner be put together wrong.

3. The patient is not annoyed by the rough edge of the gauze or metallic frame, and yet it will fit closer to the face, thereby requiring less of the anesthetic.

4. Should the gauze become soiled with vomit or sputa during anesthesia it can be almost instantly replaced with new.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

RULES GOVERNING THE ADMISSION OF ARTICLES TO THE BOOK, "NEW AND NON-OFFICIAL REMEDIES."

(The term "article" shall mean any drug, chemical or similar preparation used in the treatment of disease.)

RULE 1.—No article shall be admitted unless its active medicinal ingredients and the amounts of such ingredients in a given quantity of the article be furnished for publication. The general composition of the vehicle, its alcoholic percentage, if any, and the identity of other preservatives, if present, must be furnished.

RULE 2.—No chemical compound will be admitted unless sufficient information be furnished regarding tests for identity, purity and strength, the rational formula or the structural formula, if known.

RULE 3.—No article that is advertised to the public will be admitted; but this rule will not apply to disinfectants, and food preparation, except when advertised in an objectionable manner.

RULE 4.—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is indicated. The therapeutic indications, properties and doses may be stated. (This rule does not apply to literature distributed solely to physicians, to advertising in medical journals, or to vaccines and antitoxins.)

RULE 5.—No article will be admitted or retained concerning which the manufacturer, or his agents, make false or misleading statements as to geographical source, raw material from which made, or method of collection or preparation.

RULE 6.—No article will be admitted or retained concerning which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to the therapeutic value.

RULE 7.—Labels on articles containing "poisonous" or "potent" substances must show the amounts of each of such ingredients in a given quantity of the product. A list of such substances will be prepared.

RULE 8.—If the trade name of an article is not sufficiently descriptive of its chemical composition or pharmaceutical character, or is, for any other reason, objectionable, the Council reserves the right to include with the trade name a descriptive title in the book. Articles bearing objectionably suggestive names will be refused consideration.

RULE 9.—If the name of an article is registered, or the label copyrighted, the date of registration and a copy of the protected label should be furnished the Council. In case of registration in foreign countries, the name under which the article is registered should be supplied.

RULE 10.—If the article is patented—either process or product—the number and date of such patent or patents should be furnished.

ACETOZONE.

A mixture of equal parts of benzoylacetyl peroxide and an inert absorbent powder.

Benzoylacetyl peroxide, $C_6H_5CO.O.O.COCH_3 = C_9H_8O_4$ is made by the oxidation of a mixture of benzaldehyde and acetic anhydride.

Benzoylacetyl peroxide occurs in white, shining crystals, melting at 36.6° C. (98°F.). When heated it slowly decomposes and volatilizes. Water at 25° C. (77° F.) dissolves one part in 1,560 or 0.639 Gm. in 1,000 Cc. It is soluble in oils to the extent of about three per cent., slightly soluble in alcohol, and fairly so in ether, chloroform, and carbon tetra-chloride, though all solvents decompose it with the exception of neutral petroleum oils.

In the presence of water it undergoes hydrolysis and slowly decomposes. This change, however, does not take place with sufficient rapidity to prevent its use in aqueous solution; in fact such hydrolysis is necessary to develop its full germicidal activity. On account of its ready decomposition, acetozone should be kept in a dry place.

For various reasons it has been found necessary to add an inert absorbent powder. As found in the market, acetozone is of a grayish white color, possessing the properties of the crystalline substance, with the exception that the absorbent powder employed is insoluble.

Actions and Uses.—Benzoylacetyl peroxide belongs to a class of compounds known as the organic peroxides in which an excess of oxygen has been combined in such a way that it is somewhat slowly given off in a nascent condition. On contact with water it hydrolyzes, forming benzo-peracid and aceto-peracid which exert marked oxidizing and germicidal action. In consequence of this change, these compounds are thought to be particularly adapted for internal administration. The germicidal and antiseptic properties of this substance have been attested by the experimental results of several observers. It has been used in ophthalmic, aural and nasal practice with asserted good effects as an antiseptic. It has also been applied internally, especially in typhoid fever, with a view to the disinfection of the intestinal canal, and appears to be an intestinal antiseptic.

Dosage.—Acetozone is generally employed in aqueous solution prepared as follows: Add acetozone to warm water in the proportion of 1 Gm. to 1000 Cc. (15 grains to the quart), shake vigorously for five minutes, and allow to stand for about two hours. Decant the liquor as required. This solution may be drunk *ad libitum*. two quarts or more being taken by an adult in twenty-four hours. Acetozone is also used in oily solution as an inhalant.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S patents No. 710,005 and No. 717,016. U. S. trademark.

ACETOZONE INHALANT.

A solution of benzoylacetyl peroxide in liquid petrolatum.

Formula: One hundred grammes contain

Benzoylacetyl peroxide	1.0 Gm.
Chloretone (chlorbutanol)	0.5 Gm.
Refined liquid petrolatum	98.5 Gm.

Dosage.—It is to be inhaled in the form of a very fine spray, or nebula, best produced by an atomizer especially designed for oily liquids.

Prepared by Parke, Davis & Co., Detroit, Mich.

ACET-THEOCINSODIUM.

SOLUBLE THEOCIN.

Acet-theocinsodium, $C_7H_7N_4O_2Na + CH_3.COONa$, is a double salt of sodium acetate and 1,3-dimethylxanthinesodium (theophyllinsodium).

It is a white crystalline powder, containing about 60 per cent. of theocin. It dissolves in 23 parts of water, but is insoluble in alcohol or ether.

Actions and Uses.—It has the diuretic properties of theocin, reinforced by the diuretic action of sodium acetate, and, being more soluble, it has been claimed to be more readily absorbed and better tolerated than theophylline.

It is recommended in cardiac affections, nephritis, dropsy, etc.

Dosage.—0.2 to 0.35 Gm. (3 to 5 grains), best given after meals.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent.

ADNEPHRIN EMOLLIENT.

An ointment composed of the suprarenal active principle and a neutral base (1-1000).

Recommended as a local application where prolonged use is required.

Prepared by F. Stearns & Co., Detroit, Mich. U. S. trademark.

ADNEPHRIN OIL SPRAY.

A 1-1000 solution of suprarenal active principle in a neutral oil, aromatized.

The preparation is applied as a spray to the mucous membranes in congestive and inflammatory affections, preferably after washing with Dobell's solution.

Prepared by F. Stearns & Co., Detroit, Mich. U. S. trademark.

ADNEPHRIN SOLUTION.

A sterile solution (1-1000) of the suprarenal active principle in physiologic salt solution containing one-half of one per cent. of methaform (chlorbutanol).

Actions and Uses.—The actions and uses of this preparation are described under Suprarenal Alkaloid.

Dosage.—The dose internally is from 0.2 to 2.0 Cc. (3 to 30 minims) in water. Adnephrin is also used in oily solution as a spray, see Adnephrin Oil Spray, and in the form of ointment, see Adnephrin Emollient.

Prepared by F. Stearns & Co., Detroit, Mich. U. S. trademark No. 41,980.

ADRENALIN.

The active alkaloid of suprarenal gland, prepared by the method of Takamine, see Suprarenal Alkaloid.

Adrenalin is a light, white, microcrystalline powder, possessing a slightly bitter taste. On heating it turns brown at 205° C. (401° F.), melts, swells and decomposes simultaneously, at 207° C. (404.6° F.).

For Tests, Incompatibilities, Actions and Uses see Suprarenal Alkaloid.

Dosage.—Locally, 1-1000 to 1-15000 solution, as the chloride. Internally, 0.3 to 2 Cc. (5 to 30 mm.) of 1-1000 solution. Hypodermically, 1 to 15 drops of 1-1000 solution, diluted with sterile water.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. patents Nos 730,175, 730,176, 730,196, 730,197, 730,198, 753,177. U. S. trademark.

ADRENALIN CHLORIDE SOLUTION.

A 1:1000 solution of adrenalin hydrochloride in physiologic salt solution, preserved by the addition of 0.5 per cent of chloretone (chlorbutanol).

Dosage.—See adrenalin.

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

ADRENALIN SUPPOSITORIES.

1 part of adrenalin to 1000 parts of oil of theobroma (cocao butter). Each suppository weighs about 1 Gm. (15 grains).

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

AGURIN.

THEOBROMINE-SODIUM-ACETATE.

Agurin, $C_7H_7N_4O_2Na+NaC_2H_3O_2$, is a double salt of sodium acetate and theobromine-sodium.

It is prepared by a method similar to that used in making theobromine sodium salicylate, sodium acetate being substituted for sodium salicylate.

It is a white, finely crystalline powder, containing 60 per cent. of theobromine. It is freely soluble in water, not very readily soluble in alcohol, but more so in hot alcohol. It is quite hygroscopic, and in watery solutions gradually splits up into its components, and more readily in the presence of carbon dioxide.

It is precipitated and decomposed by carbon dioxide and by acids: it forms a bluish white precipitate with silver nitrate, a blue precipitate with copper sulphate, white with tartaremetic, red-brown with ferric salts. It is not readily precipitated by Mayer's reagent, nor by iodine.

It is incompatible with carbonated beverages, acids, saccharine and mucilaginous liquids, and most of the alkaloid reagents.

Actions and Uses.—It acts like theobromine, over which it has the advantage of great solubility and that it is well tolerated by the stomach. While inferior in diuretic power to theophyllin (which see), it is said to have greater power in sustaining the diuresis produced.

Dosage.—0.5 to 1 Gm. (7 to 15 grains), preferably in wafers or capsules. If in solution, this should be freshly prepared (with peppermint water) and without sugar or mucilage.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. trademark.

AIROL.

BISMUTH OXYIODOGALLATE. AIROFORM. BISMUTH IODOSUBGALLATE.

Airol, $C_6H_2(OH)_3(COOBiI(OH))=C_7H_6O_6IBi.$, is a combination of bismuth oxyiodide (subiodide) and gallic acid.

It is prepared by heating molecular quantities of bismuth subgallate and hydriodic acid or bismuth oxyiodide and gallic acid, in the presence of water, until a grayish-green product results, which is drained and dried.

It is a voluminous grayish-green, odorless and tasteless powder, insoluble in alcohol, ether, chloroform, and olive oil, slightly soluble in glycerin. It is practically insoluble in water, communicating to water a red color on standing, slowly in the cold, but readily when heated, being decomposed with liberation of iodine and bismuth subgallate. It is readily soluble, with decomposition, in dilute alkalies and mineral acids. It is decomposed on exposure to moist air, turning red, but in admixture with glycerin and a little water it long remains unaltered.

Airol may be identified by the appropriate tests for its components.

It is incompatible with water and calomel. It should not be exposed to moist air.

Actions and Uses.—As it liberates iodine in the nascent state in the presence of wound secretions it has been recommended as a desirable and efficient substitute for iodoform in the treatment of wounds, burns, skin diseases, gonorrhea, etc.

Dosage.—It is used externally in the pure state or diluted with talc, or in the form of a 10 per cent. suspension in equal parts of glycerin and water, or as a 10 to 20 per cent. ointment with 2 parts of petrolatum and 7 parts of wool fat.

Manufactured by F. Hoffmann-LaRoche & Cie., Basle, Switzerland (The Hoffmann-LaRoche Chemical Works, New York). U. S. patent No. 544,101, German patents No. 80,399 and 82,593. U. S. trademark No. 26,405.

ALPHA-EUCAINE HYDROCHLORIDE.

EUCAINE HYDROCHLORIDE "A." ALPHA-EUCAINE.

Alpha-eucaine hydrochloride is the hydrochloride of benzoyl-methyl-oxypiperidine-carbonic methyl ester.

It is prepared by treating triacetonamine with hydrocyanic acid, hydrolyzing the product by boiling with water, then successively introducing the benzoyl and methyl group by treatment with benzoyl chloride and methyl iodide, purifying the synthetic base (alpha-eucaine) so obtained by crystallization from ether or alcohol, and converting it into hydrochloride by solution in dilute hydrochloric acid and crystallization:

It occurs in colorless crystalline scales or powder, neutral in reaction. It is soluble in 10 parts of cold water. Its solutions may be sterilized without change. The base is precipitated on addition of alkalies or their carbonates.

Its 5 per cent. aqueous solution yields a white precipitate with mercuric chloride, which distinguishes it from beta-eucaine hydrochloride, but not from cocaine, from which it is distinguished by a yellow crystalline precipitate produced if 3 drops of a 5 per cent. aqueous solution of chromic acid are added to 5 Cc. of a 1 per cent. alpha-eucaine solution.

It is incompatible with alkalies and their carbonates.

Actions and Uses.—The action of alpha-eucaine is similar to that of cocaine, but it is regarded as three and three-fourths times less toxic than cocaine. In large doses it first stimulates and then paralyzes the central nervous system; it slows the heart and produces a fall of blood pressure. Locally it acts like cocaine as an anesthetic, but dilates the blood vessels instead of contracting them. It does not dilate the pupil. It is more irritating to the mucous membrane than cocaine or than beta-eucaine. It has a moderate bactericidal action. It is used as a substitute for cocaine in general and minor surgery, but beta-eucaine is preferred for applications to the eye.

Dosage.—2 to 5 or even 9 per cent. solutions. Not more than 2 Cc. (30 minims) of a 4 per cent. solution should be used at one time.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York). U. S. trademark No. 28,438.

ALPHOZONE.

SUCCINIC DIOXIDE, SUCCINIC PEROXIDE, DISUCCINYL PEROXIDE.

Alphozone, $(COOH.CH_2CH_2CO)_2O_2 = C_8H_{10}O_8$, is an organic peroxide resulting from the action of hydrogen dioxide on succinic anhydride.

It is prepared by shaking 25 Cc. of a 7.5 per cent. solution of hydrogen peroxide with 10 Gm. of ordinary crystallized succinic anhydride, taking care that the temperature does not rise above 30° C. (86° F.).

It is a fluffy, white, crystalline powder, the crystals being small irregular plates. It dissolves in 30 parts of water at ordinary temperature. It is moderately soluble in alcohol, acetone, and ethyl acetate, sparingly soluble in ether, insoluble in benzene, chloroform and ligroin. Odorless or nearly so; softens at 115° C. (239° F.) and melts at 127.° C. (262° F.) with decomposition. When brought into a flame it explodes, but it does not explode on percussion or friction. It deteriorates slightly on continued exposure to air, but if kept tightly stoppered and in a dark place it remains unchanged indefinitely.

It is a powerful oxidizing agent liberating iodine from potassium iodide. It can be identified by its physical properties and its powerful oxidizing action. To test its strength add 2 Gm. of potassium iodide to 1Gm. of alphozone dissolved in 60 Cc. of distilled water. To this slowly add decinormal solution of sodium thiosulphate with constant agitation until the red brown color of the iodine is just discharged. Each cubic centimeter of sodium thiosulphate solution is equivalent to 0.0117 Gm. of alphozone. 1 Gm. of pure alphozone is equivalent to 85.41 Cc. decinormal sodium thiosulphate solution.

Actions and Uses.—Alphozone belongs to the class of organic peroxides, and by its powerful oxidizing power becomes a germicide and antiseptic.

Dosage.—Alphozone is also marketed in the form of tablets containing, each 0.065 Gm. (one grain), of alphozone, which are used for making solutions, one tablet to 60 Cc. (2 fluid ounces) of water giving a solution (1 to 1000) suitable for general external use; but, as a nasal douche, one tablet in 180 Cc. (6 fluid ounces) of water is often preferred.

Manufactured by F. Stearns & Co., Detroit, Mich. U. S. patents Nos. 768,561, 768,562 and 768,563. U. S. trademark No. 41,981.

ALUMNOL.

ALUMINUM BETANAPHTHOL-DISULPHONATE. ALUMINI NAPHTHOLSULPHONAS.

The aluminum salt of β-naphtholdisulphonic acid, $Al_2(C_{10}H_5.OH.(SO_3)_2)_3 = Al_2C_{30}H_{18}O_{21}S_6$.

It is prepared by mixing solutions of barium naphthol-disulphonate and aluminum sulphate in molecular proportions, filtering off the barium sulphate, and evaporating the filtrate to dryness.

It forms a fine, nearly white, non-hygroscopic powder, soluble in 1.5 parts of water, forming a faintly acid and slightly fluorescent solution.

It is also easily soluble in glycerin, but sparingly soluble in alcohol and insoluble in ether. When dried it loses about 9 per cent. of water, and when exposed to the air it is darkened in consequence of its reducing properties. It is precipitated from solution by albuminous and gelatinous bodies, but these precipitates are redissolved in excess of the latter bodies.

The aqueous solution (1-10) should be clear, and after acidulation with hydrochloric acid should become at most only slightly turbid, and only just tinted bluish by potassium ferrocyanide; nor should precipitates be produced in it on the addition of diluted sulphuric acid or solution of ammonium oxalate. The dried compound should yield 12.7 per cent. of ash (alumina) on incineration.

It should not be exposed to the air, and is incompatible with salts of silver, or other reducible salts.

Actions and Uses.—It is an astringent and mild antiseptic. It is claimed that it can be used as a mild astringent, an irritant or a caustic, according to the strength of the solution, and it is asserted that it exerts a peculiarly destructive action on gonococci. It has been recommended for a variety of affections in which a caustic, astringent or antiseptic is indicated. It has been particularly recommended for gonorrhea in females, especially when affecting the endometrium.

Dosage.—As a surgical antiseptic, in 0.5 to 3 per cent. solutions; in gynecology, in 2 to 5 per cent. solutions; in otology and laryngology, either as powder or in 1/4 to 1 per cent. solution as douches, washes or gargles; as cautery, in 10 to 20 per cent. solution.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). German patent No. 74,209.

AMINOFORM.

A name applied to Hexamethylenamina, U. S. P.

Sold by C. Bischoff & Co., New York.

ANESTHESIN.

PARAMIDOBENZOIC ACID ETHYL ESTER.

Anesthesin, $C_6H_4(NH_2)(COOC_2H_5)\ 1{:}4 = C_9H_{11}O_2N$ is the ethyl ester of paramidobenzoic acid, obtained by the reduction of paranitrobenzoic acid.

Paranitrobenzoic acid is obtained by the oxidation of paranitrotoluene, and this may be ethylized by the action of sulphuric acid and alcohol and the ester so obtained reduced to paramidobenzoic acid ethyl ester by the action of zinc and hydrochloric acid, or the acid may first be reduced and subsequently converted into the ethyl ester.

It is a white, crystalline powder, easily reduced to impalpability, melting at 90° to 91° C. (194° to 195.8° F.); odorless and tasteless, but producing a sensation of numbness when placed on the tongue; almost insoluble in cold and difficultly soluble in hot water; soluble in six parts of alcohol, in ether, benzene and, to the amount of 2 to 3 per cent., in fatty oils. In oil solutions it may be sterilized without decomposition, but by prolonged boiling or by warming with dilute alkalies it is split up into alcohol and paramidobenzoic acid.

It should form clear, colorless and neutral solutions in alcohol or ether; after acidification with nitric acid it should not give a precipitate with silver nitrate. Its solution in dilute hydrochloric acid (1 to 10) is not affected by hydrogen sulphide. If a few drops of sodium nitrite solution be added to the slightly acidulated aqueous solution followed by some alkaline betanaphthol solution, a cherry red coloration of bluish shade is produced, which changes to orange on further addition of hydrochloric acid. It is decomposed by prolonged heating with water and is incompatible with alkalies and their carbonates.

Actions and Uses.—It was introduced as a substitute for cocaine and is a local anesthetic, similar in its action to orthoform and said to be equally effective, but free from irritant action and toxicity. The anesthetic action, like that of the related compound orthoform, resembles that of cocaine, but is purely local, does not penetrate the mucous membranes, and in consequence of its insolubility the compound can not be used by hypodermic injection. In consequence of its insolubility the anesthetic effect is more prolonged than that of cocaine.

It is recommended in various forms of gastralgia, in ulcer and cancer of the stomach for the relief of pain, and is applied locally in rhinologic and laryngeal affections, urethritis, etc.; it is also recommended for anesthetizing wounded surfaces, burns, ulcerations and painful affections of the skin. It is more effective in cases where the skin is broken.

Dosage.—Internally, 0.3 to 0.5 Gm. (5 to 8 grains), in pastilles. Externally it is applied as a dusting powder, either pure or diluted. It may be applied as an ointment or in the form of suppositories.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). German patents Nos. K 19,416, 19,495 Anm.

ANTIPYRINE SALICYLATE.

ANTIPYRINÆ SALICYLAS. SALIPYRINE. SALAZOLON. SALIPYRAZOLON.

Antipyrine salicylate, $C_{11}H_{12}N_2O.C_6H_4OH.COOH = C_{18}H_{18}N_2O_4$, is a weak chemical combination of antipyrine and salicylic acid.

It is prepared by heating antipyrine and salicylic acid, in molecular proportions, on the water bath, allowing the oily product to congeal by cooling, and crystallizing it from alcohol.

It occurs as a white, coarsely crystalline powder, or in hexagonal tabular crystals, melting at 91° to 92° C. (195.8° to 197.6° F.); odorless, slightly sweet; soluble in 200 parts of cold and 40 parts of boiling water; readily soluble in alcohol, less readily in ether. It is decomposed by acids with the elimination of salicylic acid, and by alkalies with the elimination of antipyrine.

Its aqueous solution is rendered milky by tannic acid, then colored green by the addition of a few drops of fuming nitric acid. It is colored deep red by ferric chloride, passing to violet-red on copious dilution with water. It must not be affected by hydrogen sulphide.

It is incompatible with acids, alkalies and tannins.

Actions and Uses.—This compound possesses the properties of both antipyrine and salicylic acid and combines the analgesic power of the one with the antirheumatic action of the other. It has been used with good results in sciatica, rheumatic fevers, chronic rheumatism, influenza, pleurisy, dysmenorrhea, etc.

Dosage.—0.3 to 2.0 Gm. (5 to 30 grains) in cachets or capsules.

ANTITHERMOLINE.

A name applied to a preparation said to be made according to the following formula: Each pound contains 4000 grains of imported washed kaolin, washed and purified, 14 grains boric acid, 14 grains oil of eucalyptus, menthol and thymol combined, and 4.9 fluid ounces of glycerin. It closely resembles the Cataplasma Kaolini, U. S. P.

Prepared by G. W. Carnrick Co., New York.

ANTITHYROID PREPARATIONS.

Preparations obtained from the blood or milk of animals, after the removal of the thyroid glands.

The use of these preparations is based on the theory that the thyroid gland secretes products which are toxic, but which neutralize, and are neutralized by, other toxic substances produced elsewhere in the body. Removal of the thyroid glands, therefore, leads to the accumulation of these second toxic substances as evidenced by the phenomena of cachexia strumipriva and myxedema. On the other hand, the blood or milk of such animals is capable of preventing the effects of a hypersecretion of thyroid substance, such as is supposed to occur in Basedow's disease (exophthalmic goiter).

These views are still largely hypothetical; but the majority of clinical observers report markedly beneficial results in the milder forms of the disease and in obscure nervous disorders which are supposedly connected with thyroid hypersecretion. The effects are less pronounced in the more severe forms. The action is merely palliative and other measures of treatment should not be neglected.

Improvement occurs in two or three weeks and is indicated by an amelioration of the nervous symptoms, tremors, palpitation, insomnia and excitability.

The administration must be long continued. Oral and hypodermic administration are equally effective, but the former is usually preferred. These preparations are not toxic, even when very large doses are used.

ANTITHYROIDIN, Mœbius.

SERUM ANTITHYROIDEUM, MERCK.

The blood-serum of sheep from which the thyroid gland has been removed at least six weeks before the blood is drawn, preserved by the addition of 0.5 per cent. of phenol.

It is an amber-colored fluid, with faint odor and taste of phenol (carbolic acid). It is marketed in amber-colored vials containing 10 Cc. (2½ drams). With proper precautions, it is said to keep indefinitely.

Actions and Uses.—For actions and uses see Antithyroid Preparations.

Dosage.—It is administered by the mouth in doses beginning with 0.5 to 1 Cc. (8 to 15 min.) three times a day, gradually increasing the dose as necessary.

Manufactured by E. Merck, Darmstadt. (Merck & Co., New York.)

ARGENTAMIN.

ETHYLENE-DIAMINE-SILVER NITRATE. LIQUOR ARGENTAMINI.

An aqueous solution of silver nitrate and ethylene-diamine, corresponding to 10 per cent. of silver nitrate.

It is prepared by dissolving 10 parts each of silver nitrate and ethylene-diamine in 100 parts of water. It is a colorless, alkaline liquid, turning yellow on exposure to the light, but not precipitable by chlorides or by albumin. It is not materially injured by exposure to light, as it may be cleared by filtration.

Actions and Uses.—It is antiseptic and astringent like other silver salts, with the asserted advantage of being non-irritant and more penetrating than silver nitrate. It is said to be useful in all cases where the non-caustic action of silver nitrate is indicated.

Dosage.—It may be used in the anterior urethra in 0.25 to 1 per cent. solution; in the posterior urethra in from 1 to 4 per cent. solution; in ophthalmology in 5 per cent. solution.

Mnfd. by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin. (Schering & Glatz, New York.) German patent, No. 74,634.

ARGONIN.

CASEINSILVER. SILVERCASEIN.

A soluble casein compound containing 4.28 per cent. of silver.

It is prepared by precipitating an alkaline solution of casein with silver nitrate and alcohol. It is a fine, nearly white powder, easily soluble in water, forming an opalescent, faintly alkaline solution, which becomes clear on the addition of sodium chloride. It is also soluble in alkaline solutions, in egg albumin, blood serum, etc.

The usual reagents for silver do not affect its aqueous solution (1-20), which should remain clear on addition of sodium chloride, and should not be affected by hydrogen sulphide. On incineration, argonin should yield at least 4 per cent. of silver, which may be identified by the usual tests after solution in dilute nitric acid. It is incompatible with acids.

Actions and Uses.—Its action and uses are similar to those of silver nitrate, but it is claimed to have greater power of permeating living colloid membranes than other silver albumoses. It is applied as an injection in 0.1 to 0.2 per cent. solution; in ophthalmic practice a 10 to 20 per cent. solution in glycerin may be used.

Dosage.—It is generally used in 0.5 per cent. solution, but even 20 per cent. solutions have been injected without producing irritant symptoms.

Manufactured by Farbwerke vorm. Meister. Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York.) U. S. patent No. 575,277.

ARGYROL.

SILVER VITELLIN.

A compound of a derived proteid and silver oxide, containing from 20 to 25 per cent. of silver.

The so-called vitellin is said to be prepared by electrolytic decomposition of serum albumin. To this product, finely suspended in water, is added freshly precipitated, moist silver oxide and the mixture is heated under pressure until combination occurs. The liquid is then evaporated to dryness *in vacuo*. The change in the proteid is in question; probably a compound of hydrolyzed proteid (serum albumin) and silver oxide is formed.

Argyrol occurs in black glistening, hygroscopic scales, freely soluble in water and glycerin, insoluble in oils and alcohol. The solution is yellowish or black, depending on concentration, and is not affected by boiling. It gives a slight cloudiness or precipitate with sodium chloride and hydrochloric acid; on addition of ferric chloride the color is discharged with formation of a white cloud. With alkali and copper sulphate it gives a slight biuret reaction. It has a slight metallic taste. Silver is recognized in the usual way.

The compound is said to be incompatible with acids and most of the neutral and acid salts in strong solution.

Action and Uses.—Solutions of argyrol (20 to 50 per cent.) are said to be non-irritating to mucous membranes. Taken internally it is said to be non-toxic. It is claimed to be an antiseptic. It is recommended in urethritis and cystitis, in conjunctivitis and in affections of the nose, throat and ear.

Dosage.—It is employed in from 10 to 25 per cent. and even stronger solutions.

Manufactured by Barnes & Hille, Philadelphia. U. S. trademark.

(*To be continued.*)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price.........Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, SEPTEMBER 15, 1906.

THE MEDICAL RECORD: AN ENEMY OF THE AMERICAN MEDICAL ASSOCIATION.

For many years the New York *Medical Record* was the leading medical weekly in America. Next to the *American Journal of the Medical Sciences*, it represented, better than any other journal, the best there was in American medicine. William Wood & Company, the owners, for nearly fifty years—practically since the present nominal head of the house, William H. S. Wood, in 1863, became a member of the firm—have conducted an exclusive medical book publishing business. The imprint of the firm has been on the title page of some of the best medical works this country has produced. This medical book and journal publishing business is presumed to have been and to be a paying one. The journal-publishing part, especially the *Record*, undoubtedly has been a source of a comfortable annual revenue.

The patronage of William Wood & Company, as medical publishers, came from the better class of physicians—those who read and think. Their journals have been of such a character as also to appeal to the intelligent in our profession. Under such circumstances, one would naturally suppose that they would have realized that the movements inaugurated by the American Medical Association against the nostrum evil, and for a better condition in the profession, would be endorsed by the thinking class of physicians—that is, by those to whom William Wood & Company were indebted for their success in the past and on whom they must depend for their support, as medical book publishers, in the future; hence, that they would, for policy's sake at least, have supported the Association in its laudable efforts. But they have done just the opposite.

Through their periodical, the *Medical Record*, they—or their employé—have seen fit, in four editorials, to attack the American Medical Association, its officers and its present activities. Their criticisms—if these attacks may be so dignified—ramify into every phase of the Association, its management, and its work. Their object, it is quite evident, was to discredit the officers of the Association, to reflect on the Association itself and to create dissension among its members. The animus prompting them also is perfectly plain to those who know how the subscriptions to the *Record* have been falling off and also to those who have observed the mass of nostrums in its advertising pages. The House of Delegates, the Board of Trustees and all the officers of the American Medical Association welcome honest criticism and suggestions that are made for the purpose of bettering conditions, but they resent attacks made to disrupt and to disorganize.

The editorials consist of insinuations and deliberate misstatements of facts and bear evidence of having been written by one who has little, if any, knowledge of the history of the Association, of the details of organization or of the work the Association is doing. These attacks should be ignored, but, appearing in a journal that in the past has been considered reliable, some of its readers have believed that there must have been some basis for the attacks, not realizing that the *Record* would stoop to malicious misrepresentations. Further, certain medical journals, for well-known reasons, have made all possible use of the matter. Knowing that their own outcries of "graft," "fraud" and "clique" were laughed at, they could now say, "You did not believe what *we* printed; now read what the *Medical Record* says."

It would be more satisfactory to quote *in extenso* from these editorials—for this would give our readers an idea of what they are, in which case no comment of ours would be necessary—but we have not the space. However, although the editorials were in the form of vague generalities, insinuations and inuendos, it evidently was the intention of the editor of the *Record* to have his readers accept the following propositions:

1. That the policy and the management of the American Medical Association is in the hands of a self-seeking "ring or clique."

This insinuation is constantly made by the editor of the *Record*. What evidence has he for such a statement? On what authority does he insinuate that the House of Delegates, composed of men elected from every state and territory in the Union and changing its membership every two years, is or can be dominated and controlled by a few men for their own purposes? Such a charge is absolutely false, is supported by no evidence whatever and is a direct insult to the representatives of the profession, who are chosen by their fellow physicians to administer and protect their interests. Never, in the history of the American Medical Association, was there assembled a more representative, fearless and independent body of men than that composing the House of Delegates at Boston.

2. That the "financial reports of the American Medical Association have been disquietingly analogous to those of insurance companies and have dealt in glittering generalities."

Had the solicitude of the editor of the *Record* regarding the affairs of the American Medical Association extended over a longer period than that of his own incumbency of his present exalted position, he would be aware that the reports of the Board of Trustees for the last few years have been far more complete and more detailed than at any other period of the Association's existence. We recommend to the editor of the *Record* a casual perusal of the Association's proceedings, not only for the current year, but for preceding years, before he attempts to misinform his readers.

3. That there is, in the minds of honest and intelligent members of the organized profession, a suspicion of "graft;" that the accounts of the Association have been "juggled;" that "more than 23 per cent. of what should have been received in dues and subscriptions remains unaccounted for."

This also is untrue, and, furthermore, it is an infamous libel on the members of the Board of Trustees, who have, without one cent of pay and at a sacrifice of their own time and professional work, looked after the business of the Association. The members of the board are men of high rank in the profession and of unblemished personal character. On what grounds does the editor of the *Record*, by covert insinuation and baseless inuendo, attempt to question their integrity? The standing of each of them is as much above suspicion as the editor of the *Record* could possibly wish his own to be. What evidence or proof has he to justify him in attacking honorable members of his own profession? As a gentleman and a member of a scientific brotherhood, it is incumbent on him either to retract his statements or to produce such evidence as will justify his malicious utterances.

4. That the House of Delegates at Boston was dissatisfied with the report of the Board of Trustees and that it was denied details regarding the business of the Association.

This statement every member of the House of Delegates knows to be false. The report of the Board of Trustees was adopted by an unanimous vote. During the reading of the report, the complete pay-roll, showing every cent paid in salaries and wages to the 150 and more employés of the Association, from the Editor to the errand boy, was submitted to the House. Detailed statements, covering every item mentioned in the auditor's report, were submitted, or were ready for the information and inspection of the members of the House. We fear the *Record* was not very well served by its Boston representatives and we suggest that hereafter more reliable and accurate data be secured as the basis for future attacks. Incidentally, we are constrained to ask by what right the *Medical Record*, or its owners, the commercial house of William Wood & Co., demand the publication of the pay-roll of the American Medical Association for the scrutiny and information of any and all commercial interests. Is such a list published by any fraternal organization, by any company or by any corporation anywhere?

5. That the surplus of the American Medical Association is nearly a quarter of a million dollars.

The editor of the *Record* has perpetrated the sophomoric error of confusing surplus with assets. The actual surplus, as shown by the auditor's report, published in THE JOURNAL, was $60,084.21. The assets of the American Medical Association, as set forth in the same report, were, on Jan. 1, 1906, $247,482.91, but the editor of the *Record* failed to note, or was unable to grasp the fact, that this included real estate and buildings, furniture and machinery, stock and cash on hand, as well as bills and accounts receivable. We have the statement of the editor of the *Record* himself made some months ago, that "the editorial and the business departments of the *Record* are absolutely separate." If his conception regarding the surplus is to be taken as a sample of his financial ability, we can not but commend the foresight of William Wood & Co. in making such an arrangement.

6. That the Treasurer of the Association, to whom the editor of the *Record* sarcastically refers as a "prominent bank director and successful financier," is responsible for the investments of the surplus of the Association.

The most superficial acquaintance with the Constitution and By-Laws of the American Medical Association would have shown the editor of the *Record* that the Treasurer is simply the custodian, under heavy bonds, of the surplus funds of the Association, which he holds subject to the order of the Board of Trustees. The Trustees themselves, and not the Treasurer, are responsible for the investment of the surplus funds of the Association.

7. That the Association has become so big "that the number of papers presented in the various sections is too great to permit of their being assimilated by the hearers, or profitably discussed."

If our self-appointed critic had been in touch with the section work, he would have known that there have been for the last four or five years fewer papers than ever before; that sixty, seventy or eighty papers in a section was not an uncommon thing in years gone by; that now, by a general law, the number is limited to forty and that some of the sections have fixed a still lower limit, some as low as twenty-five. As the editor of the *Record*, so far as we know, never attended a session of the Association, he is excusable for this misdirected criticism.

8. That there is no need of the proposed medical directory; that the proceeds of the directory will increase the income of the Association to half a million dollars; that the sales of the book to non-members and the profits of the advertising will pay the cost of production and that the publication of the American Medical Directory is absolutely without excuse.

The consideration of the Directory demands a chapter by itself, which we propose soon to present to our readers. Suffice it to say at this point that the editor of the *Record* either has no conception of the objects of the Directory and what it will stand for, or else purposely ignores them. These matters have been fully discussed in THE JOURNAL time and again. In THE JOURNAL, Nov. 18, 1905, for instance, appeared a detailed statement of the plan and scope of the work, which evidently the editor of the *Medical Record* has never read. This, however, is no excuse for his ignorance. His profound suggestion that the Association give away twenty thousand—now it would be twenty-six thousand—copies of the Directory to its members is too puerile for comment. We once more pause to congratulate William Wood & Co. that their editor has no connection whatever with the business department of the *Record*.

9. That there is "loudly expressed dissatisfaction with the present management all over the country, which is assuming definite form in the organizing of new state medical societies and even serious talk of a rival national organization."

Will the editor of the *Record* kindly name any state in which a new state medical society is being organized? The Association office is presumed to know the actual conditions regarding medical organization throughout the country. But, evidently, this presumption is unfounded. The *Record* has discovered a condition that was not known to exist. Now, what are the facts? Never before was there less opposition to the plan of organization than now prevails in every state and territory, all but two being organized on a uniform basis. Until two years ago, there was opposition in several states; now there is practically none. In Georgia, immediately after the reorganization of the State Association, there was some disaffection on the part of a few physicians and some transient agitation for the organizing of another state society, but this amounted to nothing. In one county in Michigan, six dissatisfied physicians agitated the organization of a new state body, but nothing definite resulted. This movement was never looked on seriously by those connected with the state society. The disaffection in both instances was the result of purely local conditions in no way related to the American Medical Association and was merely a remnant of the disaffection that at one time prevailed in many states. Never has the profession been more united, never before has it been so influential, never have there been so few local jealousies, and never has there been a more hopeful outlook in every way than now.

10. That the Walker resolution, introduced at the Boston session, was defeated through the efforts of the officers or the Board of Trustees or their friends, and that an attempt was made to suppress an investigation of the business affairs of the Association.

Again, we are led to deplore the inaccuracy of the reports received by the *Record*. The facts are these: The moment the reading of the resolution was concluded, it was at once tabled by the practically unanimous vote of the House. There was no discussion. The members of the House cared for none. There was no time for the officers to express themselves even had they desired to do so. The statement that the resolution was opposed by the officers, the trustees or their friends is an absolute falsehood, unless the entire membership of the House of Delegates is included under the designation "friends." The Association and its officers are fighting secrecy and deception and are not practicing it.

11. That at Boston "a strenuous effort was made to get rid of the Editor, and that so great has become the dissatisfaction with his administration that this endeavor might have been successful had the general body any voice in the management of the Association."

This statement is unqualifiedly false, as all who attended the Boston session well know. There was an opposition, it is true, and a bitter one, but it was limited to the horde of nostrum vendors who have been getting rich by humbugging and deceiving our profession, and to the owners or attachés of those medical journals nourished by the same brood, who allow themselves to be used as the mouthpieces and tools of proprietary interests. The Editor of The Journal of the American Medical Association knows full well that he is hated with a most intense hatred by these gentlemen and their allies, and that they would stop at nothing to secure his "dismissal," but he also knows, and knows thoroughly and well, that the "management" was fully and completely endorsed by 95 per cent. of the physicians at the Boston session, and, for that matter, is endorsed by a like proportion of the physicians of the country, who know the truth of what is going on.

So much for the "facts" regarding the American Medical Association as set forth by the editor of the *Record*. Just a word as to that gentleman himself. He graduated in the spring of 1877 and so has been a member of the medical profession for 29 years. During all this time, his interest in the American Medical Association and in medical organization was so great and his enthusiasm so uncontrollable that in March, 1906, just ten weeks before the Boston session, he became a member of the American Medical Association. Truly, not without reason has the zeal of the new convert become proverbial. Had he devoted a small part of the 29 years of his professional life to a more careful study of the organization of which he was, at last, to become a member, he might have been able to discuss the Association's affairs intelligently, if not truthfully. During all this time, men whose membership in the organization numbers years while his numbers weeks were earnestly and unselfishly striving, not only to build up the American Medical Association, but to bring about better conditions in our profession. During the same time, what has the editor of the *Medical Record* done in this respect? Yet he now arrogates to himself the right to criticise and, by implication and by baseless insinuations to brand these same men as "boodlers" and "grafters."

Is it probable that the business interests of an old and hitherto reputable publishing house will be enhanced by the use of its journal as a medium for such malicious, unfounded and unwarranted attacks? We think not. However, we commend this thought to the consideration of William Wood & Co. of New York.

TREATMENT OF TYPHOID FEVER.

A brief review of the opinions expressed with regard to the treatment of typhoid fever at the recent meeting of the British Medical Association will have special value at this season, not only because the subject is always a live one, but because of the different points of view of our British colleagues. There is little difference of opinion to be reported, but many of the ideas expressed in the discussion deserve notice because of their practical character. Two phases of the treatment of typhoid fever received special attention, and these may well be called the eternal questions in typhoid fever, the problem of removing harmful infectious material from the intestines, and that other ever-recurrent question, What shall the typhoid-fever patient be fed?

The declaration that the bowels of typhoid-fever patients should be kept rather loose, so as to prevent the retention of large numbers of bacilli in the intestinal tract and the consequent absorption of large amounts of the toxic material excreted by these bacilli, was not received with favor. It was pointed out both by our English and Canadian confrères that typhoid patients who are somewhat inclined to be constipated do better than those whose bowels are loose. A distinguished English authority said that the only cases of typhoid fever in his practice about which he became anxious were the sufferers from diarrhea. These patients fall victims to intestinal hemorrhage and perforation much more frequently than those who are constipated. In a large number of cases the mortality among those who had diarrhea was more than twice as great as among those who were more or less constipated.

It was further pointed out that the presence of the bacilli is evidently not a matter to be feared. Patients recover from typhoid fever, gain rapidly in weight and apparently enjoy the best of health, yet continue to excrete typhoid bacilli for many months. It must not be forgotten that these bacilli can be found in the urine of patients often for three months and sometimes for much longer, yet there is no bad effect from them, except the possibility of infection to others, and the patient is sometimes actually in better health than before the attack. The effort of the physician, then, who wishes to help Nature in the struggle with the disease must be not merely to encourage the removal of as many bacilli as possible, but to help Nature with the production of that immunity to the typhoid bacilli which eventually occurs in all persons who recover. The few bacilli that might be removed from the intestinal tract by means of purgatives are as nothing compared to the many millions of those organisms that continue to pass from the system after the patient has become thoroughly convalescent.

The rational treatment of typhoid fever, then, consists in the promotion of immunity. There are no direct means for this, but indirectly the best remedial measure is evidently to preserve the patient's strength as much as possible in order to encourage a healthy reaction. In securing this object the question of how typhoid-fever patients must be fed becomes important. There is practically universal agreement now that an exclusive milk diet—except for patients who are very fond of milk and who can take large quantities of it without disturbance—is a mistake. During the first week of typhoid fever, patients rarely crave any food, and only small amounts should be given. As soon as they begin to develop an appetite, however, additions should be made to their diet, and the extent of these additions was the special subject of discussion. Several, even of the most conservative, of British physicians declared that they considered it advisable to give a patient almost anything he asked for. This is, of course, to be followed only as far as the more nutritious classes of foods are considered. All kinds of fruit juices are to be permitted, though the greatest care must be exercised in the removal from them of seedy particles or anything else that, failing to be digested, might prove irritant to the typhoid ulcers. Some would allow all kinds of meat if asked for, provided the meat was given in a very fine state of division.

It was agreed that it is very difficult to decide just what is the meaning of solid food. Milk unmixed with barley water or with arrowroot will often, in the words of Sir Thomas Barlow, be found in the intestine in large craggy masses which certainly must prove a serious cause of irritation to the typhoid ulcers. On the other hand, finely minced meat will become thoroughly fluid under normal conditions of digestion. In normal circumstances only indigestible food remains in solid condition as low down as the terminal portion of the ileum. It would seem advisable, then, to feed patients much more liberally both as regards quantity and variety than has been hitherto the custom, first in order to shorten the stay in the hospital, an important consideration for workingmen, and, second, in order to prevent the occurrence of the sequelæ of typhoid fever, such as abscesses of various kinds and thromboses, which were shown by statistics to be much more frequent after typhoid fever treated with an exclusive milk diet than when treated with a more generous and varied diet.

THE PHARMACOLOGY OF "SOMNOS."

About a year ago "Somnos," a proprietary preparation put out by the H. K. Mulford Company, was taken up by the Council on Pharmacy and Chemistry. Preliminary examination showed that it was a preparation of chloral, probably a solution of a weak compound of chloral and glycerin. The advertising literature sent out by the H. K. Mulford Company was worded in such a way as to hide from physicians the real nature of the preparation, but, instead, stress was laid on the claim that it was free from chloral. The attention of the officers of the company was called to the matter, and it was hoped that they would submit a plain statement regarding the composition of the preparation and modify the literature to conform with the actual facts. This they did not seem inclined to do, at least they did not do it.

The Council having become satisfied regarding the actual composition of Somnos, a subcommittee was asked to investigate its physiologic action and to compare this with that of chloral so that the claims made by the manufacturers regarding its therapeutic action might be verified or disproved. These investigations were conducted last April and May, and the report has been ready since that time, but has been withheld, awaiting the action of the H. K. Mulford Company. By reference to The Journal, two weeks ago,[1] it will be seen that the H. K. Mulford Company, in a roundabout way, has acknowledged that Somnos is a combination of chloral and glycerin, but it still persists in claiming that "the product is safer than any known hypnotic, that it produces normal sleep, is less depressing than the bromids and absolutely without any untoward effect on the heart, respiration and vasomotor centers or the blood."

For the reason that the old claims regarding the therapeutic action and safety of Somnos were persisted in, the report of its pharmacology was ordered published. It will be found in this issue.[2] This report may not make interesting reading to the average physician, since it is more or less technical. Nevertheless, it is to be hoped that physicians have become sufficiently interested in the great question which is affected by this report to get at least the sum and substance of it. Condensed into a few words, the experiments show conclusively that the combination of chloral and glycerin, put out by the H. K. Mulford Company as "Somnos," is *practically identical in its physiologic action with a solution of hydrate of chloral containing a similar quantity of the drug, that it is fatal in the same relative doses, and that the company has made claims for its preparation which, look at the matter as we may, are extravagant in the extreme.*

It is to be regretted that a reputable pharmaceutical house such as the H. K. Mulford Company should have stooped to such practices. To say the least, it has not been honest and square in this matter. It has made claims for its preparation as a therapeutic agent that would be considered fraudulent in the extreme were they made regarding a "patent medicine."

While criticising the H. K. Mulford Company, however, we regret to say that it is not the only firm of standing that has been guilty of such practices, as may be shown hereafter. There are many preparations manufactured and sold by pharmaceutical houses of standing which are exploited under false claims, either as regards their composition or their therapeutic action, or both. It is to be hoped that the Council will not be obliged to make public *the actual facts* regarding these preparations, but that the manufacturers themselves will conclude to be honest and square with our profession and state the facts themselves, or withdraw the articles from the market.

The object of the Council is to bring about better conditions for the future, not to punish for past misdeeds.

PHYSICAL BASIS OF LIGHTNING DREAD.

The mortality statistics of the last five years show t the average annual number of deaths from lightni was more than 200. The report of these sad accide is read with terror, yet with avidity, by many pers who have an inordinate dread of lightning, and the c sequence is an increase of their lightning phobia, that toward the end of the summer a thunder sto becomes a source of positive dismay. It is usually c sidered that such persons have an unreasoning dread lightning, but an analysis of cases soon shows that m of them are sensible persons under ordinary conditio though they lose all their confidence in themselves alm at the first sign of a lightning storm.

There is no doubt now in the minds of those who h studied a number of those cases closely that the dre of lightning is a true phobia, though there is in it v probably much more of a physical basis than there is the most of the unreasoning dreads which are call phobias. While the sufferers from mysophobia, the f of dirt, which makes people wash their hands dozens times a day, have the excuse that it is because they dre the presence of microbes that they wash so frequently, is well known that such cases occurred long before t present state of acute attention to microbes so charact istic of our day developed. There is here simply an i perative idea that they must not let themselves be co taminated by dirt, an idea from which they can not away. Most of the other phobias are of the same distinctly psychic character and can be overcome only by suggestion, though, as a rule, the amelioration of the person's health brings about an improvement in the annoying symptoms. In all of these cases there is a distinct condition of what used to be called neurasthenia, though in recent years there has come to be a very general realization that, owing to the preponderance of the mental element in these cases, the term psychasthenia or phrenasthenia is much more expressively descriptive.

It seems clear, however, that there is something in the physical condition of the elements just before and during a thunderstorm which affects certain people very unfavorably. It has been suggested that the disturbance of the ether which causes telegraphic instruments to be less easily used than before and which so seriously disturbs long-distance telephone lines may have its effect also on the brain neurons. That the neurons may affect and also be affected by vibrations in the ether is well recognized. When as president of the British Association for the Advancement of Science some years ago Sir William Crookes took "Telepathy" for the subject of his address, he suggested as the only possible explanation for certain well-recognized phenomena of the communication of minds at a distance from one another, the traveling of impulses from one set of neurons through the circumambient ether to the other set. Only such minds can thus communicate as have the same moment of vibration, just as only such wireless telegraphic stations can communicate with each other as have their sending and receiving instruments properly attuned to each other.

---

[1] The Journal, September 1, page 695.

[2] See page 872.

It would seem that the minds of persons who suffer from a great fear of lightning become primarily affected by the magnetic disturbance in the ether which sympathetically is communicated to their neurons. In spite of every reasoning, then, a panicky condition develops to a great extent beyond the control of the will. Under these circumstances reassurance is given to such persons by a straightforward explanation of the reason for their phobia in the physical affection which exists in the underlying basis of mental operations. This proves a very valuable suggestion of therapeutic value even in the worst cases. In some individuals it becomes almost curative in effect, even though the physical dread of lightning does not disappear. It has been suggested that this method of mental therapeutics would save a great deal of suffering in many cases.

NEW AND NON-OFFICIAL REMEDIES.

The first installment of the list of proprietary articles approved by the Council on Pharmacy and Chemistry appears in this issue. It is expected that an installment will appear each week for some months, or until all the articles that have been approved shall have been announced. It is understood that this publication in The Journal is preliminary to the publication in book form. It will be noticed that the Council asks for suggestions and criticisms, especially from physicians. The object is to supply our profession with reliable information regarding proprietary medicines, and in such a way that it will be a help to physicians in deciding not only whether or not a preparation is worthy of confidence, but also to aid them in judging of its therapeutic value. Hence, if our readers feel that the matter can be put in a form more useful to them, they should submit their views to the secretary of the Council. It is now over a year and a half since the Council was organized; some may wonder why so long a time has been necessary before the profession could have the benefit of its deliberations. Those who realize the actual conditions that faced the Council at the beginning, the important problems to be solved, the immense amount of work inseparable from an undertaking of this magnitude, will not wonder that so much time has passed before actual work, as far as the approved preparations are concerned, is made public. Further, the Council has realized that any false step might cause criticism and bring about a failure at the very outset; consequently, extraordinary care has been observed so that no steps should be taken that might have to be retraced.

THE WEST VIRGINIA MEDICAL JOURNAL.

The most recent addition to the state journals is the *West Virginia Medical Journal,* which, with its August number "with its very best bow, steps modestly into the charmed circle of state medical society journalism, and hopes for a warm welcome." There is little fear that it will be disappointed, as it covers a territory in which a clean, ably edited and aggressive state journal is greatly needed. The first number, carefully edited and well printed, appears in magazine form, 7 x 9¾, with fifty pages of reading matter mainly devoted to papers read at the last annual meeting of the state association, together with the minutes of the House of Delegates and news from county societies. The number also contains a complete alphabetical list of the members of the state association. The new journal is in the hands of a committee on publication, consisting of Drs. S. L. Jepson, L. D. Wilson and John L. Dickey, all of Wheeling, and is printed in Wheeling. We feel sure that the members of the West Virginia State Medical Association will appreciate the great benefit from this new journal, and will assist those in immediate charge in making it a power for good and a credit to the profession of West Virginia.

TASTES OF MOSQUITOES.

It has often been noted that mosquitoes seem to have special likes and dislikes and that some persons are much more annoyed by them than others. Now that the question of disease conveyance has become a more important consideration than the annoyance, the reasons for this special liking for individuals are being carefully studied by a number of observers. A summary of these observations and an account of a series of recent experiments have been made by Professor Galli-Valerio,[1] director of the Institute for Experimental Hygiene and Parasitology at the University of Lausanne in Switzerland. He has found that the color of the clothes worn by the individual has most to do with the supposed preferences of the mosquito. His experiments were conducted with various forms of anopheles. Nearly four times as many of these mosquitoes lighted on dark-colored clothes in a given time as on light colors. This shows that the chances of the number of mosquito bites may be greatly reduced by choosing light colors for clothing, though this is not sufficient to afford complete protection. It is thought that this is about as effective as tobacco smoke in securing immunity from the insect stings. This is so simple that as an additional precaution when in malarial countries it can be put into effect by all, and, as everything that helps to ward off malaria is of value, non-immunes going into malarial districts should be advised of it by their physicians. It is particularly the casual traveler in the tropics who is not likely to provide himself with the very light-colored clothing so commonly worn by the inhabitants, yet it is he who, most of all, needs the added protection against mosquito bites which is said to be thus afforded.

---

[1] Daily Consular and Trade Reports, Sept. 5, 1906, issued by the United States Dept. of Commerce and Labor.

THE CAUSE OF DEATH.

Physicians should appreciate the necessity of designating correctly the cause of death. Science is in no way served when the cause of death, for instance, is entered on the certificate simply as "convulsions," or "heart failure," or "pulmonary edema." The patient may have died immediately or directly in such circumstance, but these unqualified statements give no clue to the disease which was the essential, indirect or underlying cause. In later years relatives are often anxious when they themselves become ill; then, again, it will be found that questions of heredity in disease, very important to be settled, must forever remain obscure. From the legal viewpoint the matter is still more grave. A defective certificate may occasion the patient's family much vexation and at the same time give the authorities unnecessary work in the way of investigation. Occasionally there may be mortification for the physician not altogether undeserved. For example, to designate a death as due simply to meningitis, peritonitis or gastro-enteritis, without qualification, may not satisfy the coroner or medical examiner. The further statement will be necessary whether the disease was idiopathic or the result of a fall, a wound, a "criminal operation" or a poisoning. Here is an example of a death certificate correctly made out, which nevertheless became a "coroner's case:" "Asthenia de senectute; contributing cause, fracture at the neck of the femur." The fracture was probably sustained in falling out of bed or by slipping on the street, as is usual in such cases. But some one may have pushed or struck the deceased, becoming thus more or less responsible for the death. In any event, whenever an accident has contributed to a death, no matter how remotely, the case is one for investigation. In most communities a letter from a reputable and responsible physician to the authorities, accompanying such death certificates, will obviate official action and spare the family annoyance.

Medical News

ILLINOIS.

Chicago.

Committed to Dunning.—Dr. Christian R. Hartung was examined in the insane court September 6 and committed to the Cook County Hospital for the Insane, Dunning.

Hospital Dedicated.—St. Vincent's Hospital, Taylorville, was dedicated August 22 with appropriate ceremonies. The hospital was erected at a cost of about $25,000 and will be in charge of the Sisters of the Most Precious Blood.

Coroner's Record for August.—The coroner of Cook County reports for August a larger death roll than any month since the Iroquois Theater fire. The table of deaths from other than natural causes during the month was as follows: Suicide, 39; drowning, 29; heat prostration, 27; railroad accidents, 26; homicide, 14; street car accidents, 13; lightning, 1, and scenic railway accident, 1.

Warning Against Diphtheria.—The commissioner of health has issued a warning to parents and teachers of children of the public schools to pay particular attention to sore throats of children, no matter if they seem to be of minor character. The opening of the schools and the consequent exposure of more than 250,000 children to unsuspected cases of diphtheria are a most important factor in the increase of the disease.

Personal.—The king of Portugal has conferred on Dr. Alexander Hugh Ferguson a commandership in the Order of Christ of Portugal in recognition of his original work in surgery.——Dr. Clinton G. Lumley, who was operated on for appendicitis August 28, is making good progress toward recovery.——Dr. and Mrs. Bernard Fantus have returned from Europe.——Dr. Henry W. Cheney and wife have returned after an eight months' absence in Europe.

Tent Sanatorium Opened.—The tent sanatorium under the auspices of the Chicago Tuberculosis Institute was opened September 3, with three portable cottages, one of which is used for a dormitory, one for a dispensary and one for a kitchen. Ten of the 20 patients for which the sanatorium has accommodations at present were already on hand at the opening day, and several other applications are being considered. The initial outlay has been about $1,500 and it is expected that the expense to maintain each patient will be about $5 per week.

Mortality Report.—The mortality for the week ended September 8 was 515, or 46 less than for the preceding week, and 15 more than for the corresponding week of 1905. This is equivalent to an annual mortality rate of 13.10 per 1,000. Of children under one year of age, 127 died, and 83 over 60 years of age. Acute intestinal diseases led the death list with 113, followed by violence, including suicide, with 52; consumption with 49; heart disease with 49; Bright's disease with 47; pneumonia with 29, and cancer with 19. During the week 10 deaths from diphtheria and 10 from typhoid fever were reported.

INDIANA.

New Sanitarium.—Dr. John Little Morris is building a 75-room sanitarium and hospital at Columbus, with modern equipment, especially for the care of non-surgical, chronic diseases.

Typhoid Fever.—A great deal of typhoid fever is reported from Huntington County. The disease seems to affect chiefly the southern parts of Union and Rock Creek townships.——From Mitchell are reported 63 cases of typhoid, with 3 deaths.

Smallpox.—Reports to the secretary of the State Board of Health show the prevalence in a mild form of smallpox in Starke, Marshall, Fulton and Pulaski counties. During the last three weeks there have been more than 20 cases of the disease, all of a mild type.

Personal.—Dr. D. F. Davis, New Albany, has returned from Europe.——Dr. Edward N. Flynn has been elected mayor of Jeffersonville.——Dr. E. J. Schott, Terre Haute, was thrown from his carriage in a runaway acident and strained his back.——Dr. Chester C. Funk has been elected secretary of the New Albany board of health.

MARYLAND.

Baltimore.

Deaths from Violence.—During August 63 deaths from violence were reported, 11 of which were due to suicide.

Personal.—Dr. John W. Hawkins, Towson, has gone to Charles County, lower Maryland, for a visit.——Assistant Surgeon Benjamin H. Dorsey, U. S. N., is visiting his home at Ellicott City.

Vital Statistics.—During the week ended September 1, 145 deaths were reported. This is equivalent to an annual death rate per 1,000 of 13.05; for whites alone, 12.06, and for blacks alone, 18.32. Typhoid fever is on the increase.

State Society to Meet.—The semiannual meeting of the Medical and Chirurgical Faculty of Maryland will be held in the famous old Senate Chamber at Annapolis, where George Washington resigned his commission, on September 27 and 28. The address of welcome will be delivered by Governor Warfield.

New Hospitals.—The offer of the widow of Dr. Frank to give $75,000 to the Hebrew Hospital has been accepted. The building will be named "Doctor Samuel Leon Frank Memorial Hospital" and will be located on the grounds of the present institution. It will be the principal hospital and the present building will be used for incurables and nurses.——Dr. Harry

Adler has been elected to succeed the late Dr. Frank as president of the Hebrew Hospital and Asylum.——Dr. Frank G. Moyer will erect a sanitarium on the site of his present residence.

To and from Europe.—Dr. Hiram Woods, president of the Medical and Chirurgical Faculty of Maryland, and Dr. Robert Hoffmann have returned from Europe.——Dr. Roland B. Whitridge is spending September in Switzerland.——Dr. W. Hewson Baltzell is at Aix-les-Bains.——Dr. Lewis C. Lehr is at Schwalbach, Germany.——Dr. J. Hall Pleasants, who has been ill with typhoid fever in Europe, has returned to Baltimore.

MASSACHUSETTS.

Pay for Medical Examiners.—The board of health of Chicopee has voted to ask the Chicopee board of aldermen for $1,000 to defray the expenses of the proposed medical examination of school children and inspection of schools.

Physician Wins Suit.—Dr. Lyman A. Jones, North Adams, has won his suit against the city for $750, alleged to be due for extra work done during the smallpox epidemic of 1904, when Dr. Jones was physician of the board of health.

Personal.—Dr. Frederick G. Smith of Somerville has returned from Europe.——Dr. Frank L. Morse, for several years city bacteriologist, has been appointed city physician of Somerville to fill the vacancy caused by the death of Dr. Alvah B. Dearborn.

Typhoid Fever.—A serious epidemic of typhoid fever has developed at Lynn. During the last two weeks 24 cases were reported. The cases are not confined to any one portion of the city, but are scattered. It is feared that the water supply is polluted.——Springfield reports 18 cases of typhoid fever. They have developed within the last two weeks.——A number of cases are reported from Middle Farms.

New Nurses' Home.—The South Framingham Hospital and Training School has been given a new nurses' home by Messrs. Frank A. and Henry B. Day, West Newton, as a memorial to their parents. The hospital expects to secure the services of a woman physician as superintendent in place of Miss Annabel L. Stewart, who has been for nearly 12 years head of the institution and who has resigned, to take effect next month.

NEW YORK.

New York City.

St. John's Guild.—On account of the very heavy call for its services, the floating and seaside hospitals will remain open as long as funds are provided.

School for Cripples.—A school for cripples is to be built at a cost of $75,000. It will be five stories high, will have a roof garden and will be situated on Water Street.

Coney Island Hospitals.—Seaside Home, Brooklyn Children's Aid Society and the Health Home of the New York Children's Aid Society remain open. The Sea Breeze Home will be kept open until October 1.

Bellevue Doctors Robbed.—There are about 50 doctors at Bellevue Hospital and nearly all suffered from looting of their dormitories, which occurred September 4. The thieves made away with all accessible jewelry, clothing and money.

Infant Death Rate Higher.—There were 312 deaths among babies in the past week, against 233 for the corresponding week of last year, all dying of summer complaint. The infant mortality, as a rule, falls at this time of the year.

Home from Europe.—Dr. Warren S. Adams arrived from Liverpool on the *Oceanic*, September 6.—— Dr. J. Waldron Bartlett arrived from Europe on the *Caronia*, September 5.—— Dr. and Mrs. Hugh H. Young arrived on the *Oceanic*, September 5.

Child Scalded in Hospital.—On September 2 a child died from scalds received while taking a bath in the Randall's Island Hospital. Coroner Harburg, after a thorough investigation, found the occurrence due to neglect and carelessness on the part of the nurse who, in consequence, was discharged.

Patients at Pasteur Institute.—An unusually large number of patients have been admitted to this institution recently, and the arrival of six in one day has caused Dr. William L. Wheeler, director of the institute, strongly to urge the shooting of all dogs suspected of being mad. He suggests shooting them through the heart so that the brains may be available for examination.

Health Department Busy.—The rules of the board of education in regard to the admittance of pupils into the public schools make this a busy season for the board of health. Much of this work is the result of neglect on the part of physicians to report births. The force can dispose of about 600 such cases a day, and in addition, some 700 or 800 vaccinations are made daily.

Death Rate Among Tunnel Workers.—The officials of the Pennsylvania Railroad Company have issued a general statement to the effect that the lives and health of its workmen are not needlessly sacrificed in the construction of the tunnels under the East and North rivers. It has been stated that the death rate is no higher than obtains among men who build steel frame skyscrapers, and where accidents have occurred, they have been due, as a rule, to a disregard of the rules and precautions laid down by the company.

Buffalo.

Personal.—Dr. Eugene Smith has returned after a four months' trip abroad.——Dr. Alvin A. Hubbell is taking a trip on the Great Lakes.——Drs. Hubert U. Williams and F. Park Lewis and family have returned from abroad.

Medical Department to Open.—The Medical Department of the University of Buffalo will open for its sixty-first annual session September 24, and continue for 34 weeks. The opening address will be delivered by Dr. James E. King.

NEBRASKA.

Personal.—Dr. A. D. Wilkinson, secretary of the Nebraska State Medical Association, leaves on September 21 for a year's trip abroad. He expects to visit Japan, China, the Philippines and Siam and to return by the way of Europe. Dr. W. H. Orr, Lincoln, will act as secretary during Dr. Wilkinson's absence.

New President of State Association.—The Council of the Nebraska State Medical Association has elected Dr. F. A. Long of Madison to serve as president of the State Association in place of Dr. J. L. Green, who resigned to take the position as superintendent of the Illinois Eastern Hospital for the Insane, Kankakee, Ill.

PENNSYLVANIA.

Much Typhoid Fever.—According to the bureau of health of Pittsburg, typhoid fever is increasing in and around that city. Two thousand four hundred and ninety-one cases have been reported during the first six months of the year, as against 858 cases for the same period last year.——On account of the prevalence of typhoid fever at Hamburg, the opening of the public schools will be postponed until September 10. It has been discovered by the authorities that the infection was present in the drinking water. In 50 per cent. of the cases reported the water used came from a well found contaminated. One hundred cases are reported in the town.——In Phoenixville 40 cases have been reported in the past three months, many having resulted fatally. A state medical inspector detailed by Dr. Warren to investigate the sanitary condition of the town, reported things in an extremely bad condition, and the local board of health claims it is powerless in the matter of checking the disease without the coöperation of the town council. Dr. Dixon has notified the authorities to take immediate action to stamp out the disease.

Philadelphia.

Personal.—Dr. Thomas F. Neil has been appointed superintendent of the county insane asylum of Blair County, Pa.—— Dr. J. Malcolm Henry has returned home from a tour through Canada.

Hospital Report.—The report of the Medico-Chirurgical Hospital for August shows 5,489 patients treated; 1,510 of these were surgical. The accident ward received 913 cases. Electric treatment was administered to 196 persons and the *x*-ray was used on 168.

Improvements for Hospital.—Plans have been completed for the remodeling of the Willberham mansion, which was purchased for the purpose of increasing the facilities of the Frankford Hospital. The first and second floors of the building will contain two general wards, nurses' room and a diet kitchen. The third and fourth floors will be children's wards and private rooms. The building will be four stories high and will measure 114 by 62 feet.

War on Impure Candy.—The arrests of 19 retail candy dealers in this city by state dairy and food comissioner, Dr. Warren, resulted in the conviction of the men. The fine in each case was $57.50, making a total of $1,092.50. The fines were paid by the New York Glucose Company, known as the glucose trust. The successful crusade conducted by Dr. Warren against the manufacturers of impure candy is considered complete, and it is now stated that he will start a campaign against other impure food concerns in the state.

SOUTH CAROLINA.

Editorial Staff Named.—The editorial staff of the *Journal of the South Carolina Medical Association* is made up as follows Editor, Dr. J. Williamson Jervey, Greenville; associate editor, Dr. Walter Cheyne, Sumter, and managing editor, Dr. Curran B. Earle, Greenville.

State Society Meets.—At the annual meeting of the South Carolina Medical Association, Dr. T. Prioleau Whaley, Charleston. for 10 years its secretary, was elected president; Dr. Walter Cheyne, Sumter, was elected secretary, and Dr. Charles P. Aimar, Charleston, was re-elected treasurer.

College Changes.—Dr. Louis D. Barbot has been elected professor of anatomy in the Medical College of the State of South Carolina, vice Dr. Francis L. Parker, resigned.——Dr. Edward F. Parker has been elected dean of the Medical College of South Carolina, succeeding his father, Dr. Francis L. Parker, who has resigned.

New Hospitals.—The Hospital Association of Anderson County at its annual meeting announced that nearly $4,000 had been raised for a hospital. The site has been purchased and the work of actual construction is expected to be started soon.——The Florence Infirmary, established by Dr. F. H. McLeod and N. W. Hicks, has been opened to receive patients.

Resigns After Long Service.—After 41 years of devoted services to the Medical College of South Carolina, Charleston, Dr. Francis L. Parker has resigned as dean and professor of anatomy. The faculty and the board of trustees have adopted resolutions which set forth the splendid services done by Dr. Parker for his *alma mater*, and appropriate expressions of the appreciation they have for his services and their sincere regret at his resignation.

Scholarships.—The governor has announced the names of the following men to whom he has awarded scholarships in the Medical College of the State of South Carolina: First district, F. H. Marvin, Summerton; second district, L. S. Hay, Allendale; third district, F. M. Routh, Anderson; fourth district, W. T. Brockman, Greer; fifth district, B. L. Robertson, Lancaster; sixth district, J. K. Stealvey, Socastee, and seventh district, C. C. Owens, Columbia.

SOUTH DAKOTA.

First Conviction Under New Medical Law.—The first arrest under the new medical law has resulted in a conviction. A. H. Bruning, a "chiropractic," was arrested on complaint of the secretary of the State Board of Medical Examiners, on the charge of practicing medicine without a license. He was tried and found guilty, August 16. A nominal fine of $50 and costs was imposed and the case will be appealed, as it is desired to secure a final ruling.

Slaughter House Regulations.—The State Board of Health has sent out circulars to the county superintendents of health, requesting that they visit and inspect the slaughter houses in their respective counties and require the observation of the following regulations: 1. A plentiful and uncontaminated water supply. 2. Proper and adequate drainage for both the slaughter houses and premises. 3. A thorough cleansing of slaughter houses and premises from manures and offal after each butchering. 4. Each slaughter house should have water-tight floors, which should be washed after each butchering, ample subdrainage and clean, whitewashed or painted walls.

UTAH.

Fee Bill Adopted.—At the August meeting of the Utah County Medical Society, held in Provo, the medical fee bill was revised and adopted.

Personal.—Dr. Walter M. Stookey and family, Lehi, expect to sail for Europe, October 10.——Dr. Samuel C. Baldwin, Salt Lake City, returned August 28 after a five months' tour of Europe.

Health Commissioner Was Arrested.—Dr. M. R. Stuart, health commissioner of Salt Lake City, was arrested August 5 for creating a nuisance by causing garbage, swill, etc., to be dumped into Horseshoe Bend. He admitted the responsibility, but plead not guilty to dumping this garbage, and the case was tried. The jury disagreed.

Typhoid Fever.—Waterloo, just outside the city limits of Salt Lake, is reported to have a serious epidemic of typhoid fever. The county physician has been empowered to investigate the source of the infection of the typhoid cases, to have the milk supply of that section analyzed and the outbuildings inspected, and has ordered a general cleaning-up of that part of the city.

VIRGINIA.

Hospital Opening.—Abingdon Hospital was formally opened August 27, and the next day the patients were received.

Smallpox.—The board of health of Lancaster County has reported 18 cases of smallpox at Churchfield, near Irvington, and one case at Whitestone, only a few miles away. Quarantine has been established. The disease is mild in character and is confined to the colored population.

Personal.—Dr. Charles W. Rodgers, Staunton, while returning from a professional visit, had a narrow escape from drowning, saving himself and his horse, but losing his buggy.——Dr. A. Chambers Ray, Eagle Lake, has been appointed physician to the Randolph-Macon College, vice Dr. William S. Ellis, deceased.

WASHINGTON.

New Sanitarium.—The Northwestern Sanitarium Association, at Port Townsend, has been incorporated with a capital stock of $50,000.

Personal.—Dr. Grant Calhoun has been appointed health officer of Seattle, vice Dr. William L. Ludlow.——Dr. R. B. Cassil, Walla Walla, has returned from a trip to Alaska.

Will Yield to Decision of Experts.—The King County Medical Society, which made a strong protest against the attempt of the Chicago, Milwaukee & St. Paul Railway to extend i road through the Cedar River water-shed, has withdrawn it objection, on account of the opinion of sanitary experts that the watershed could be crossed without pollution to the water supply of the city.

WISCONSIN.

Leaves Large Estate.—The will of the late Dr. John A. Rice, Merton, has been filed for probate, the testator leaving about $100,000 in personal property and nothing in real estate.

Personal.—Dr. Henry W. Morgenroth, Berlin, who was operated on for appendicitis at St. Mary's Hospital, Oshkosh, August 14, is reported to be making an uneventful recovery.——Dr. Thomas S. Clark, Knowlton, has been committed to the State Hospital, Oshkosh.——Dr. O'Leary, Husher, sailed for Europe, August 30.

Physical Examination of School Children.—The Milwaukee Medical Society is making preparation for the inauguration of physical examination of school children. The expense of the experiment will be borne by the society, and Drs. Arthur J. Patek, Arthur W. Akerly and George P. Barth have been appointed a committee and placed in charge of the work.

GENERAL.

Hospital Cars.—It is reported that the Pennsylvania and the Baltimore & Ohio railroads are about to have hospital cars built to care for the injured in the railroad wrecks. The Erie is said to be the only eastern railroad at present possessing such cars.

Copies of The Journal Wanted.—We are in need of the issues of The Journal of July 7 and 14, 1906, so that orders for back numbers may be filled. If any of our readers will return these numbers we will remit ten cents for each copy, or will send in exchange any other numbers desired.

A Fraudulent Agent.—Dr. Franklin H. Martin, Chicago, asks us to warn physicians against one G. E. Simpson, who is fraudulently taking orders for *Surgery, Gynecology and Obstetrics.* He says that many physicians have already been victimized by this man by paying him in cash or giving him checks payable to his own order; and this notice is published in the interest of the profession and to stop his further operations.

Pathologists and Other Physicians Wanted in Illinois Hospitals.—The Illinois Civil Service Commission will hold examinations very soon for a pathologist at Kankakee ($2,500 a year and maintenance), and pathologists in six other hospitals for the insane, paying from $75 to $125 per month and maintenance; also for physicians in the charitable institutions, not insane, and for assistant physicians in the hospitals for the insane. These positions pay from $75 to $150 a month. There will also be examinations for surgeons in the Soldiers Orphans' Home at Quincy, positions which pay from $60 to $125 a month and maintenance. These positions are of great importance to the institutions of Illinois, and the commission is greatly interested in obtaining the very best talent for the examinations and in making them a success. Joseph C. Mason, secretary, Springfield, Ill., will send further information.

CANADA.

Winnipeg Hospital News.—The Winnipeg General Hospital treated 346 patients during the week ended September 1. Of this number 212 were men, 100 women ad 34 children.

Personal.—Dr. Charles Monod of Paris, France, is visiting his son, Dr. Ferdinand Monod of the Glengarry Hospital, Montreal.——Dr. Charles A. Ritchie, Winnipeg, Man., has gone to London, Edinburgh and Dublin to study.——Dr. Hamilton of Halifax is on her way to China to take a position in the hospital at Shanghai as a medical missionary.

Health Officers on Tour of Inspection.—Dr. Montizambert, director-general of public health, Ottawa, has been in British Columbia on a tour of inspection. Accompanied by the chief quarantine officer of British Columbia, Dr. Watt of the William Head quarantine station, he is visiting the Grosse Isle quarantine station and the leper hospital at Tracadie, N. B. They will return to British Columbia and choose a site for the new leper hospital in British Columbia.

Vaccination of School Children in Montreal.—No child is now allowed to attend school in Montreal unless able to show a certificate of successful vaccination. In certain new wards recently annexed to the city vaccination in the past few years has not been very rigidly enforced. In one of these out of a population of 600 pupils but 175 had been vaccinated. The Montreal medical health officer states, however, that there is now very little trouble in inducing parents to have their children vaccinated.

Analysis of Canned Meats.—A bulletin has just been issued from the laboratory of the Canadian inland revenue department dealing with the subject of canned meats. In all 322 samples were purchased in different sections of Canada and subjected to the same examination. Both canned meats from the United States and Canada were selected. The former were from dealers, but the latter were secured from dealers, wholesalers and also from the factories. Only four samples gave any evidence of decomposition, a proportion amounting to only 14 per cent. The preservatives sought for were salicylic, benzoic, sulphurous and boric acids, but the latter was the only one detected, and that in a percentage lower than required by the English parliamentary commission, namely, 0.5 per cent. A close inspection of the tabulated list of the analyses shows that as far as Chicago packing-houses were concerned in these products that two samples of one house showed "slight traces of boric acid" and "boric acid;" while two samples of another Chicago house showed "boric acid" and "meat badly decomposed."

FOREIGN.

Congress of Microbiology.—A three-day session of the newly founded Association for Microbiology—*Freie Vereinigung für Mikrobiologie*, was held at Berlin in June with a comparatively large and much interested attendance. The *Berliner* and the *Münchener med. Wochschr.* are publishing a simultaneous report of the proceedings. They represent the "last word" in bacteriologic, serotherapeutic and similar research among German scientists.

Retirement of Some Prominent German Professors.—It is rumored that von Leyden and Olshausen intend to retire from the medical faculty at Berlin University. E. v. Bergmann will also give up further teaching this fall when he passes his seventieth birthday, and W. Erb of Heidelberg will retire at the close of the winter semester. These men are all doing good work and do not feel their encroaching age, but they say they want to make room for the younger men.

To Combat Bovine Tuberculosis in Argentina.—The *Semana Medica* of Buenos Ayres states that the government has commissioned the director of the Bacteriologic Institute, don José Lignières, to go to Germany to study on the spot von Behring's method of treating tuberculosis in cattle. He is given leave of absence for five months, and the ministers from Argentina to France and Germany are ordered to facilitate his task, as special envoy from the government, by all the means in their power.

Demonstration Against Surgical Exhibition.—A foreign exchange states that an exhibition of Doyen's lantern slide, cinematographic representation of various operations, which he was giving, for some strange reason, before a lay audience, caused an uproar. The pictures representing an amputation of the arm and a trephining were accepted without protest by the general audience, but when Doyen proceeded to an abdominal operation the audience protested so clamorously against the reproduction that he was obliged to desist. Our exchange comments that such views are not adapted for the general public, however instructive they may be for medical men.

The Bottini Memorial.—A memorial tablet was recently unveiled at Pavia, Italy, to the memory of the late surgeon, E. Bottini. Behind the tablet were immured a gold medal with the portrait of the deceased and an elaborate souvenir volume containing works by his pupils and friends, with an address on parchment—all of which had been prepared to present to the master on the occasion of the twenty-fifth anniversary of his assuming the chair of surgery at Pavia. The plans for the ceremonies were annulled by the unexpected death of the great surgeon not long before the arrival of the anniversary. The tablet stands between one erected to the memory of Scarpa and another to Porta, and the inscription on the marble is merely a few words of tribute to the man "who by his genius in the science and the art renewed the glorious traditions of the Pavia school of surgery." Golgi is the dean of Pavia University, and Tansini is the present incumbent of the chair of surgery.

Visit of French Physicians to Germany.—A number of prominent French physicians and surgeons have recently taken a trip to Germany, with their ladies, and visited the scientific institutions in some of the larger cities. At Marburg, von Behring regaled the party with an account of his latest researches on tuberculosis, especially with a description of his tulase, a clear fluid containing somatic substance of the tubercle bacilli, obtained by treatment with chloral. It is used for active immunization or Mithridatization, as he calls it, and his extensive experience with sheep has been very encouraging. In the clinic it has to date been given subcutaneously, but it is given by the mouth to sheep, and this will probably prove the preferable route. Until the clinical value of this new Mithridatic remedy has been thoroughly established, he said, it will not be obtainable except in free samples for clinical research. Already favorable reports are being constantly received. He spoke rather discouragingly of the possibility of an effectual serotherapy for tuberculosis. Active immunization will probably be required, possibly combined with a serum. The trip generally proved so delightful and instructive, and the cordiality of the reception on the part of the physicians and surgeons of Berlin and elsewhere opened up such pleasant vistas of future trips of the kind, that, on Kutner's suggestion, an international committee for medical study trips was organized while the party was at Berlin. The committee appointed consists of Kossmann of Berlin as chairman, Bazot of Paris, Guyot of Geneva, Kutner of Berlin, Lifrange of Bertrix in Belgium, and Pini of Bologna.

LONDON LETTER.

(*From Our Regular Correspondent.*)

London, Aug. 24, 1906.

Typhoid Fever in India.

Lord Kitchener has presided over the first meeting of a committee on typhoid fever, which was held at Simla. He stated that he thought it necessary to form the standing committee to advise as to efforts to reduce typhoid fever among the troops and to coördinate in the work of the whole medical profession in this direction. The ravages of cholera were worse in days gone by, but they are now, happily, a reminiscence. He has great hopes that the scourge of typhoid fever will eventually be brought under control. Young soldiers are most subject to the disease on arriving in the country. For some time experiments in antityphoid inoculation have been performed in India and great advances have been made on the system prevailing at the time of the South African war. The thoughtlessness of the soldier with regard to care of himself is a great difficulty. If inoculation is to be made more popular, he thought efforts should be directed to make it less painful and unpleasant. He suggested an inquiry as to whether this could be accomplished by using a more diluted serum or distributing the dose over three or more injections, instead of two, as is the practice now, or reducing the amount of serum to be injected. Since the South African war the dose has been reduced considerably. If all discomfort could be avoided in the process an immune period of six months might be sufficient instead of two years, which is now aimed at. Then universal inoculation of the new arrivals might be looked for.

Phthisis in Calcutta.

In recent years the mortality from phthisis in the large towns of India has caused some anxiety to the authorities. In the absence of medical certification registration of the causes of death is imperfect, but such information as can be obtained points to a serious and increasing mortality from tuberculosis. In Calcutta, the matter has been specially investigated by the officers of the plague department. The results for 1905 have been published in a report to the municipality by Dr. F. T. Pearse. The population of Calcutta is 847,796—562,596 males and 285,200 females. The umber, of Hindus is 551,462—361,176 males and 190,286 females; and of Mohommedans 249,939—174,117 males and 75,822 females. The report takes cognizance only of those two classes which constitute about three-fourths of the population of the city. The number of deaths due to phthisis in 1905 was 1,648 or 1.9 per 1,000. In England the rate is 1.3; in Bombay, 3.8; and in Indian gaols, 2.96. Thus in Calcutta the rate is high as compared with European figures, but low as compared with Indian. The age and sex incidence of the mortality is peculiar. The death rate for males is 1.4 and for females, 2,86. For Hindus, 1.8 and Mohammedans, 2.8; for Hindu males, 1.4 and females, 2.4; for Mohammedan males, 1.6 and females, 4.6. The excess of mortality among females, especially Mohammedan females, is striking. In England, on the contrary, the death rate of males from consumption is higher than that of females. The proportion of cases at early ages is also higher in Calcutta than in England. The excess of female mortality is attributed by Dr. Pearse to deficiency of fresh air. He finds that the proportion of cases is higher in huts than in houses. The average number of persons to a room is 2.41 in former and 1.72 in the latter.

The Antitoxin Treatment of Diphtheria.

The above report also shows that since 1889 the mortality rate of diphtheria has declined from 40.5 per cent. to 8.3 per cent. in 1905, when it reached its' lowest point. How far this is due to the antitoxin treatment and how far to the more complete diagnosis of diphtheria by the aid of bacteriology may be debated. The declining mortality of tracheotomy cases, however, points to a marked influence of antitoxin. In the two years preceding the use of antitoxin the mortality was 66 and 70 per cent. respectively. In the next year, 1905, it was 50.2 per cent., and since then it has steadily declined to 27.6 per cent. in 1905.

The Proposed Union of the Medical Societies.

A meeting of the general committee of representatives of the medical societies in London has been held to consider the report of the organizing committee. Sir William Church presided. The first meeting of the members of the societies was held at the Royal College of Physicians, in 1905, for the purpose of promoting union. The report recommended that all male members of those societies which took part in the amalgamation should be permitted to join the new society on its formation as fellows or members without election, and that all female members of the societies should become members of the corresponding section or sections of the new society. It was recommended that the society should consist of the following sections which represented existing societies, but that the new society should have power to add new sections: 1, Anesthetic; 2, balneologic and climatologic; 3, clinical; 4, dermatologic; 5, diseases of children; 6, electrotherapeutic; 7, epidemiologic; 8, laryngologic; 9, life insurance; 10, medical; 11, neurologic; 12, obstetric and gynecologic; 13, odontologic; 14, ophthalmologic; 15, otologic; 16, pathologic; 17, surgical; 18, therapeutic. It is hoped that in the early future an anatomic and physiologic section and a section of preventive medicine will be formed. The Medico-Physiological Association and the Medico-Legal Society hope to join at some future date. It was recommended that each section should be self-governing so far as possible and should have direct representatives on the council of the society and on the editorial committee, but that expenditure should be subject to the control of the finance committee of the general council. The general management of the society would be under the control of a general council consisting of the president, the presidents of the various sections, two treasurers, two librarians, two secretaries, and 8 other fellows.

The Report of the Rotunda Hospital, Dublin.

The reports of this celebrated hospital are always looked forward to with interest by those interested in the progress of obstetrics. In the report for 1904-5, which has recently been issued, important structural additions are announced which will increase the accommodation by two large maternity wards and will supply ample isolation wards, a special room for the delivery of infective patients, and a disinfecting chamber. The maternity beds are of an antiquated pattern and date from a time when it was not uncommon to place two mothers with their babies in one bed. Their width precludes the possibility of placing cots between them and as a result the child has to be placed in bed with its mother. Many disadvantages follow: The infants are irregularly fed and occasionally suffer from infective enteritis, the result of the mother's dirty fingers or her pocket handkerchief being placed in the child's mouth. A more serious result is fatal overlying. A new form of bed has been introduced with a lever and rachet arrangement for elevating the head so as to ensure more efficient lochial drainage. The number of women delivered in the hospital has been steadily increasing and during the year exceeded that of any similar period since the foundation of the hospital. The number of admissions was 2,241 and of deliveries 1,904. As the result of better antisepsis and the more even distribution of the admissions, which prevented the overcrowding recorded in the last report. the morbidity has fallen from 10.7 to 6.7 per cent. and the number of deaths from 13 to 6. A most useful form of chart is employed for more readily recording morbidity and has been adopted by many other maternities. It consists of separate charts for temperature and pulse and is ruled with a deep line at 99° on the former and at 90° on the latter. Temperature and pulse must rise above these lines and remain above them for 3 consecutive morning and evening registrations, or in other words, for a period of 24 hours, before the case is recorded in the books as morbid. Thus the transitory and unimportant exacerbations of temperature and pulse which are not infrequently seen in cases which it would be misleading to term morbid. are eliminated. Furthermore, the irregularities of pulse and temperature so frequently seen within 24 hours of delivery are not taken into account.

Doctors and Medical Emergencies.

The refusal of a physician to respond to an emergency call by persons who are not his patients often becomes a subject for criticism in coroners' courts. The following case is an example: A man poisoned himself by drinking oxalic acid. A physician who was summoned refused to go on the ground that the man was not his patient. The coroner, in summing up the evidence, raised the question as to whether the death of the diseased was accelerated by the absence of medical treatment and, if so, whether any one was to blame. He said that it is very difficult to say whether medical assistance would have been of any use or not. The opinion of the police surgeon was that it would not. The jury, however, could not overlook the fact that the first physician called, though told that the man had poisoned himself, refused to go on the ground that the deceased was not his patient. He was asked by the coroner whether he would like to attend the inquest or had any statement to make. He replied that he was not aware that he was bound to attend to any call that might be made on him, whether by the police or other persons. If the police required assistance they had their proper officer to whom to apply. In the present case he was expecting to be called out and therefore declined to leave home. Commenting on this, the coroner said that there is no law which compels a physician to answer a call to a man dying in the next street. But he said that he thinks there is a law higher and stronger than the law of man which calls us to try to help those in great distress without waiting to think what it will cost us, or what we shall have to pay, or whether it is convenient. Even those who have no medical knowledge would feel it a duty to go and help, as one witness did, if they knew a man was dying. He thought that the refusal of the physician to go in this case brought disgrace on a high and honorable profession. The jury endorsed the coroner's remarks by adding them as a rider to the verdict. Subsequently, the proceedings at the inquest were considered by the North-East Essex Division of the British Medical Association and a protest was made against the coroner's remarks. The meeting resolved that it is not the duty of individual members of the profession but of the municipality to make proper provision that so far as practicable no case of sudden and dangerous illness shall remain without prompt medical attention; that while physicians are ever ready to respond to the calls of humanity they are bound to consider the claims of their own patients and can not neglect these to attend to casual calls to strangers; that such summonses, even when stated to be urgent, are often found to be not so; that in the present case the messenger had not made clear to the physician the urgency of the case; that the members of the division, while repudiating the impracticable view of their duties in such cases suggested by the coroner, would be prepared to coöperate with the municipal authorities in devising a proper scheme for providing medical attendance in emergencies.

The Ventilation of the House of Commons.

The ventilation of the House of Commons has been a frequent subject of debate during the past 40 years and no satisfactory method has ever been devised. The ventilation of both houses of Parliament was originally planned by Dr. Boswell Reid. From 1865 to 1889 it was superintended by Dr. John Percy, the metallurgist, who devised many ingenious contrivances for cleansing the entering air and for regulating its flow; but he never succeeded in establishing a system beyond the reach of criticism or one equally adapted to the variations of weather. Since his death, the problem has continued and the chemical examinations of the earlier period have been supplemented by bacteriologic ones. Last year a committee consisting of Sir Michael Foster, as chairman, with Dr. J. S. Haldane and Dr. Mervyn Gordon, was appointed to carry out further systematic observations. Their report has been recently published. Whether judged by the amount of carbonic acid present, the temperature or the humidity, the atmosphere of the House was found to fulfill all reasonable requirements. The cause of the appointment of the committee was an outbreak of influenza among the members. It was admitted that so far as objective tests went, the quality of the air of the house was good, but the subjective test of the members' sensations pointed in the opposite direction. It was a common experience that the air of the chamber wanted "freshness," and that a stay in it for a length of time caused "lassitude and a feeling of heaviness." It was also pointed out that as the air is admitted through the floor it is liable to dust and various pollutions carried on members' boots. The character of the air admitted from the terrace was also impugned. It was found that, although the Thames mud below the terrace swarms with intestinal bacteria, these but seldom reach the inlet, either in the form of spray or dust. The admitted air is washed and filtered through cotton wool. Even before washing it presents no appreciable quantity of any noxious ingredient. The boots of the members were found to be responsible for a small quantity of dried and powdered manure in the dust of the house. There was no discoverable entrance of influenza by either road. Dr. Mervyn Gordon has devised an ingenious method of testing the contamination of the air of rooms by speakers. He discovered that a characteristic bacterium (*Streptococcus brevis*) is always present in human saliva. On placing plates of agar in various positions about a room cultures of this organism appeared. He demonstrated the fact that in speaking droplets of saliva are projected through the air to a distance varying with the vigor of the speaker, sometimes as far as 40 feet. He inoculated the mouth of a speaker with an emulsion of a harmless and easily recognized bacillus (*B. prodigiosus*) and distributed plates in various position in the House of Commons. On one plate, which was placed on the minister's box, he found no fewer than 83 colonies of this bacillus. There was abundant evidence that a member convalescent from influenza might be a source of danger to those in the direction of his speech. The committee recommend a more abundant introduction of air and its better diffusion. As regards the introduction of dirt into the house on the feet, ample precautions are already taken against ill results. The matting on the gangways is disinfected weekly and the floors are aspirated with a vacuum cleaner. The amount of dust so extracted from the debating chamber amounts to 45 pounds weekly.

VIENNA LETTER.

(*From Our Regular Correspondent.*)

Vienna, Aug. 12, 1906.

New Regulations for the Out-Patient Departments in State Hospitals.

With the beginning of the new term or semester at the university hospital, new regulations for the admission of patients to the out-patient halls will come in force for all public, i. e., state hospitals in the capital. The abuse has attained such a degree that at last our ever too slow magistrates were forced by a very powerful agent to condescend to reconsider the matter. This most influential agent was the deficit in the yearly report of the financial committee, which reached the figure of 27 per cent. of the total turn-over for 1904-5. A joint action of both the hospital managers' board and the representative of the medical council was proposed and resulted in the adoption of the long-expected changes. In future, material help to these out-patient departments will be free only to such as will provide a testimonial of poverty, to be signed either by the landlord of the tenement or by specially appointed guardians of the poor. This testimonial will admit the bearer to the out-patient department or ambulatorium, as it is termed here, and he will receive in exchange for this document a card entitling him to be seen by the medical staff of the hospital. For certain cases exceptions to the rule are provided for. Thus every case of accident or emergency is free from all formality or "red tape." If the treatment has to be continued for a very long period, or by unusual apparatus and remedies not in possession, as a rule, of the general practitioner (radium, *x*-rays), the patient or his medical advisers may apply for permission to frequent the ambulatorium. A moderate charge is then not inappropriate. Patients of the hospital wards, if discharged, may continue the treatment if it proves necessary, at the ambulatorium without any special permit. This applies to the surgical and certain medical cases. A special feature, and one which will meet the approval of all general practitioners, is the clause debarring persons belonging to one of the obligatory sick benefit clubs from the privileges of the hospital. These persons, who by their positions as subordinates of commercial or business establishments are by law forced to enter one of the "contract clubs," and who have to be attended by specially appointed contract doctors, have their own specialists and still abuse the hospitals. They will have to be seen in future by their own medical advisers. Furthermore, the present habit of supplying the out-patient with bandages, medicines and the like free of charge will be stopped, only such material as is used in the dressing room for surgical patients will in future be granted. To insure a just mode of dealing with the patients they will be treated according to the time of their arrival.

Increase of Poisonous Serpents and Protective Measures.

Certain districts in the southern countries of Austria are suffering from the presence of dangerous serpents of the viper type. The abnormal condition of the temperature seems to have a very favorable effect on the development of whole families of these pests, and during recent maneuvers several accidents happened therefrom. The ministry of war, therefore, has ordered a number of men in each company to be supplied with small packets of permanganate of potassium, which has been found to be very useful in counteracting the poisonous effects of the bite, and small gratuitous quantities of the permanganate are distributed in the affected district by the local authorities, apart from the regular "serpent hunts" established by certain army officers.

New Radioactive Baths.

Ever since the examinations, conducted by competent scientists, of the nature of the therapeutic action exercised by the Gastein waters have shown that the main source of the beneficent quality is the presence of radium emanation, experiments have been going on in the place where the greatest quantities of pitchblend and radium salts are found, in Joachimsthal near Prague, to ascertain whether the waters found in these mines could not be used for medical purposes. At the clinic of Professor Neusser of Vienna, whose name is well known in Europe, a large number of patients have been subjected to a treatment with these waters. Patients with gout, rheumatism, neuritis and diabetes have been benefited by the internal and external use of Joachimsthal mine water. It has been found that there are two distinct groups of waters to be obtained therefrom. The weaker water, containing from 8.000 to 10,000 volts of emanation, was derived from the underground springs and brooks, which are constantly flowing in the deeper shafts and have to be pumped away to keep the mine workable. The stronger water was obtained from the refuse of the mining process, which combines various chemical processes, and in its last step requires the washing of the material by sulphuric acid. The ultimate results are uranium (used for coloring purposes) and a water charged with radium emanation in a high degree, so that it excels the Gastein waters three or four times in its voltage. These latter waters have been used also for prostatic enlargement with remarkable success. The baths have shown themselves so active that general symptoms (due to destruction of leucocytes) may appear after incautious use. In Joachimsthal itself, a bathing house with at present only 12 cabins has been established for radium baths. In a similar way the hot sulphur baths of Baden, near Vienna, have been tested and the presence of radium emanation, though in a lower degree, was detected. The experiments tend to show that the presence of the active principle is in an inverse ratio to the temperature of the water. The sulphur mud deposited at the hot springs in this place contains radium bromid, so that it affects the photographic plate. This explains why, for instance, inveterate cases of skin disease respond so readily to the mud baths at Baden, although they are refractory to water baths and ointment even in Achen or other hot sulphur baths. It is planned now to institute special radioactive sulphur baths in this place, and it will be the first health resort of its kind which can boast both of the vicinity of the capital and of the radioactivity.

Pharmacology

SOMNOS.

To the Council on Pharmacy and Chemistry of the American Medical Association:—Your subcommittee, to whom was assigned Somnos, H. K. Mulford Company, submits the following report of experiments, undertaken to compare the effects of Somnos with those of chloral hydrate. These experiments demonstrate that the statements made in regard to the action of Somnos are in conflict with Rule 6 of the Council, which requires: "No article will be admitted or retained concerning which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to the therapeutic value." It is, therefore, recommended that Somnos be not approved for inclusion in the book until the claims made for it are corrected. It is also recommended that the report be published:

The Pharmacology of Somnos.

When these experiments were begun, April, 1906, there was nothing in the advertising literature on Somnos to indicate whether this article is a solution or a pure substance. On the label on the bottle, in the circular accompanying the bottle, and in the booklet "Somnos," the word Somnos seemed to be used as a synonym of "Chorethanal alcoholate," $C_9H_{11}O_5Cl_9$ and physicians were prescribing and pharmacists dispensing it in the belief that it was a pure substance. "The pure substance; some kind of an alcohol; nothing to do with chloral," was the way the druggist from whom the samples were purchased put it. Thus information absolutely indispensable for any rational comparison of Somnos with other hypnotics was witheld from the physician.[1]

Hence, before beginning the physiologic experiments it was necessary to determine the strength of the preparation; for this purpose three chlorin determinations (by the Carius method) were made. On the assumption that all the chlorin present was in combination as chloral glycerate, $C_3H_5[CCl_3.C(OH)_2]_3 = C_9H_{11}O_6Cl_9$, and calculating the percentage of this in Somnos, the following results were obtained: (1) 5.11 per cent.; (2) 5.15 per cent.; (3) 5.10 per cent.

Somnos, therefore, was found to contain approximately 5 per cent. of chloral glycerate and its physiologic action was compared with that of a 5 per cent. solution of hydrated chloral. In some experiments the hydrated chloral was dissolved in water; in others, in 10 per cent. alcohol (Somnos was found to contain at this time about this percentage of alcohol); in other experiments glycerin was added, as Somnos was found to contain this substance. No very marked differences were found in the physiologic action of the three solutions.

FATAL DOSE OF SOMNOS FOR THE LOWER ANIMALS.

The booklet on Somnos states that "Somnos has no toxicology"; that while chloral hydrate causes "acute poisoning," "deep coma," etc., Somnos is "harmless in twenty times the dose prescribed," "coma unknown, etc." The physician would scarcely suspect from such statements that Somnos is as poisonous a substance as solutions containing hydrated chloral in corresponding amount; that such is the case is shown by the following experiments. These experiments were necessarily made on the lower animals. While such results do not enable us to draw very definite conclusions as to the absolute toxicity of poison for man, the results on animals are conclusive as regards the relative toxicity for man of such closely related drugs as hydrated chloral and Somnos.

EXPERIMENTS ON MICE.

Injected subcutaneously into mice, there is but little difference in the lethal doses of Somnos and a 5 per cent. solution of hydrated chloral (Tables 1 and 2).

Table 1.—Somnos injected subcutaneously.

Weight of mouse	Somnos c. c.	$C_9H_{11}O_6Cl_9$		Results
		Per mouse	P'r gm. mouse	
19.86 gm.	0.28	13.9 mg.	0.7 mg.	Survived.
18.12 gm.	0.25	12.68 mg.	0.7 mg.	Survived.
19.35 gm.	0.29	14.51 mg.	0.75 mg.	Died 1¾ h.
18.62 gm.	0.3	14.9 mg.	0.8 mg.	Died 15 h
15.68 gm.	0.26	13.33 mg.	0.85 mg.	Died 4 h.
25.02 gm.	0.45	22.52 mg.	0.9 mg.	Died 10.5 h.

Table 2.—Hydrated chloral, injected subcutaneously.

Weight of Mouse	Hydrated chloral (in 5% aqueous)		Results
	Per mouse	Per gm. mouse	
18.62 gm.	11.17 mg.	0.6 mg.	Survived.
24.12 gm.	15.68 mg.	0.65 mg.	Survived.
24.62 gm.	17.23 mg.	0.7 mg.	Survived.
20.16 gm.	15.12 mg.	0.75 mg.	Survived.
22.16 gm.	17.73 mg.	0.8 mg.	Died 30 min.
17.72 gm.	14.53 mg.	0.82 mg.	Survived.
18.50 gm.	15.73 mg.	0.85 mg.	Died 5 h.

Table 3.—Hydrated chloral, *per os.*

Weight of guinea-pig	Mg. of Hydrated chloral (in 5% aqueous solution)		Results
	Per animal	P'r gm. anim'l	
455 gm.	227.5	0.5	Survived.
335 gm.	184.25	0.55	Survived.
660 gm.	369.5	0.56	Survived.
305 gm.	183.0	0.6	Died, 9 h.
340 gm.	240.0	0.6	Died, 6¼ h.
365 gm.	240.9	0.66	Died, 4¾ h.

Table 4.—Somnos, *per os.*

Weight of guinea-pig	Somnos c. c.	Mg. of $C_9H_{11}O_6Cl_9$		Results
		Per animal	Per gm. animal	
590 gm.	5.66	283.2	0.48	Survived.
420 gm.	4.2	210.0	0.5	Survived.
265 gm.	2.65	132.5	0.5	Died, 14 h.
370 gm.	4.07	203.5	0.55	Died, 7¾ h.
355 gm.	4.26	213.0	0.6	Died, 34 h.
340 gm.	4.41	220.5	0.65	Died, 3¼ h.
435 gm.	5.8	291.45	0.67	Died, 3½ h.
415 gm.	5.9	294.65	0.71	Died, 2 h. 10 m

Table 5.—Hydrated chloral in 10 per cent. alcohol *per os.*

Weight of guinea-pig	Hydrated chloral in 10% alcohol per animal c.c.	Mg. of Hydrated chloral		Results
		Per animal	Per gm. animal c. c.	
290 gm.	2.9	145.0	0.5	Survived.
435 gm.	4.35	217.5	0.5	Survived.
410 gm.	4.53	221.4	0.54	Died, 2½ h.
350 gm.	4.06	203.0	0.58	Died, 1¾ h.
340 gm.	4.28	214.2	0.63	Died, 2 h.
385 gm.	5.2	261.8	0.68	Died, 3 h.

EXPERIMENTS ON GUINEA-PIGS.

Administered *per os* to guinea-pigs, there is but little difference in the lethal dose of Somnos and a 5 per cent. solution of hydrated chloral in water or dilute alcohol (Tables 3, 4 and 5).

On page 5 of the booklet "Somnos," the astonishing statement is made, "All tests showed that Somnos, given in twice the fatal dose of chloral hydrate, merely produced natural sleep. from which the animals awakened in a normal condition." Since Somnos is about a 5 per cent. solution of chloral glycerate, it is evident that a 5 per cent. solution is here compared with a pure substance: this is equivalent to saying that it is possible to give more of a 5 per cent. solution of a poison than of the undiluted poison. When it is remembered that in the booklet in which this statement is made the strength of

---

[1] Two weeks ago (Journal A. M. A., Sept. 1, 1906, p. 695) it was pointed out that the manufacturers now give this information, but in a wholly unnecessarily obscure form.

Somnos is nowhere *given*, can there be clearer evidence of a deliberate attempt at misrepresentation?

2. The conclusions drawn by C. C. Stewart in a report in Bulletin, No. 1 of the American Pharmacologic Society are of interest in this connection. This writer *states*, p. 19: "As nearly, therefore, as can be determined by experiments on the lower animals, twenty times the normal dose (that is, 10 ounces of the elixir, Somnos, for a 70 kilo. man) must be considered as an extremely dangerous quantity, while thirty times the prescribed dose (that is, 15 ounces for a 70 kilo. man), may be *considered* as lethal." It is a well established fact in pharmacology that the more highly developed the brain the more toxic, relatively, are substances which act primarily on this organ; hydrated chloral, for example, is, in proportion to body weight, more toxic for man than for the dog. Hence it is fair to assume that this figure 20, derived *from* experiments on the lower animals, is high rather than low. Yet the firm has been sending broadcast throughout the country the statement that Somnos is "harmless in twenty times the dose prescribed." To what extent this statement has been accepted it is impossible to state. In the booklet, "Somnos," p. 17, is an interesting *testimonial* from Kent Kibbie, professor of anatomy, Medical Department, Dallas University, Fort Worth, Texas: A woman violently insane for three weeks, to whom had been given "liberally" "morphin, chloral, sulphonal, and the bromids," was given ten tablespoonfuls of Somnos in the course of five hours; after five hours, she "*simmered* down" and slept for twelve hours. The question may be asked what would have been the result had she received twenty to forty tablespoonfuls, the amount which is stated by the manufacturer to be harmless?

It may be noted, in this connection, that in the above report Stewart records no experiments on *the comparative toxicity* of Somnos and hydrated chloral; if the American Pharmacologic Society is really endeavoring to get impartial information about Somnos before the medical profession, it would seem that this should have been one of the first subjects investigated.

EFFECTS OF SOMNOS ON RESPIRATION, CIRCULATION AND TEMPERATURE.

The booklet on "Somnos," in comparing the effects of *Somnos* with *chloral* hydrate states, page 13, *for* Somnos, "heart never depressed; pulse strong, regular and full, respiratory center stimulated rather than enfeebled, temperature uninfluenced," etc., while the dire effects of hydrated chloral are stated thus: "Weak, irregular, slow, feeble pulse; diminished respiration and lividity; temperature subnormal," etc. In the following experiments, the effects of Somnos on respiration, blood pressure and temperature were compared with those of corresponding amounts of hydrated chloral; the doses employed were just sufficient to cause a few hours quiet sleep. Sometimes the sleep caused by Somnos was slightly deeper and more prolonged; in other cases, the effect of the hydrated chloral was slightly greater, but we do not believe that the most experienced observer could have told from the effects with which drug he was working.

Experiments on Dogs.—Experiments were made on two dogs very similar in breed and disposition:

Experiment 1.—April 30, 1906. Black bitch; weight, 4.75 kilos.

10:26 a. m.—Rectal temperature, 39.6 C. Very lively; barking.
10:28—1.899 gm. hydrated chloral dissolved in 38 c.c. of 10 per cent. ethyl alcohol *per os* (=0.4 gm. hydrated chloral per kilo. body-weight).
10:32—A little quieter, but moving about; staggering. Stands on
10:37—Rolling about; raises body up on fore feet.
10:36—Unable to stand: tries it and falls.
hind legs; does not bark.
10:35—Tumbles about a little.
10:38—Respirations 44 a minute.
10:39—Barely able to raise head; does not react strongly to pinching ear.
10:40—No conjunctival reflex.
10:43—Impossible to arouse.
10:45—Respirations 68 a minute.
11:15—Rectal temperature 38 C. Respirations 36 a minute. No reflexes.
12:00—Moved about on insertion of thermometer; had to be held. Rectal temperature, 35.9 C. Easily aroused, almost gets up.
12:45—Moves about; can raise up on forelegs; then falls. Very "groggy." Impossible to insert thermometer without holding.
1:00—Rectal temperature, 35.8 C.
1:20—Slight convulsive movements.
2:00—Dog standing, but staggering. Rectal temperature, 36.7 C. Up and howling.
3:00—Practically recovered; very noisy. Rectal temperature, 38.4 C.
4:00—Rectal temperature, 38.8 C. Entirely recovered.

Experiment 2.—May 1, 1906. Black bitch; weight, 3.943 kilos.

11:06—Rectal temperature, 39.6 C.
11:10—31.5 c.c. Somnos given *per os* (=1.577 gm. of chlorethanal alcoholate = 0.04 gm. per kilo.).
11:15—Movements slightly incoördinated.
11:19—Tumbling about; hind legs paralyzed, but holds head up.
11:21—Barely holds head up.
11:26—Lying down, unable to hold head up; 40 respirations a minute.
11:35—Moves head slightly on inserting thermometer.
11:40—Rectal temperature, 37.8 C. Reacts very slightly to pinching.
11:45—Respirations, 42 a minute.
11:50—Conjunctival reflex absent. Impossible to arouse; pinching, etc., causes slightly accelerated respiration.
12:05—Barely perceptible reaction on insertion of thermometer.
12:10—Rectal temperature, 36.2 C.
12:45—No reaction on insertion of thermometer.
12:50—Rectal temperature, 34.8 C.
1:05—Respirations, 18 a minute.
1:15—Shows tendency to wake; throws herself about slightly.
1:20—Rectal temperature, 34.3 C.
1:25—Almost gets up. Respirations, 16 a minute..
1:50—Rectal temperature, 34.2 C.
2:00—Respirations, 16 a minute. Deeply under; can be aroused slightly.
2:10—Quivering.
2:30—Reacts considerably to insertion of thermometer.
2:35—Rectal temperature, 34.4 C.
2:39—Holding head up; tumbles about a little.
2:55—Sitting up, but very unsteady.
3:00—Stood up, but very unsteady.
3:05—Rectal temperature 36.2 C.
3:20—Up and walking about; almost recovered.
3:35—Rectal temperature 37.2 C.
4:20—Rectal temperature 38 C.

The condition of the animals in these two experiments was very nearly the same; the narcosis was equally prolonged (about three hous). The narcosis from Somnos was a little deeper; the temperature and respiration were also more depressed. The effects on the temperature are shown in Figures 1 and 2.

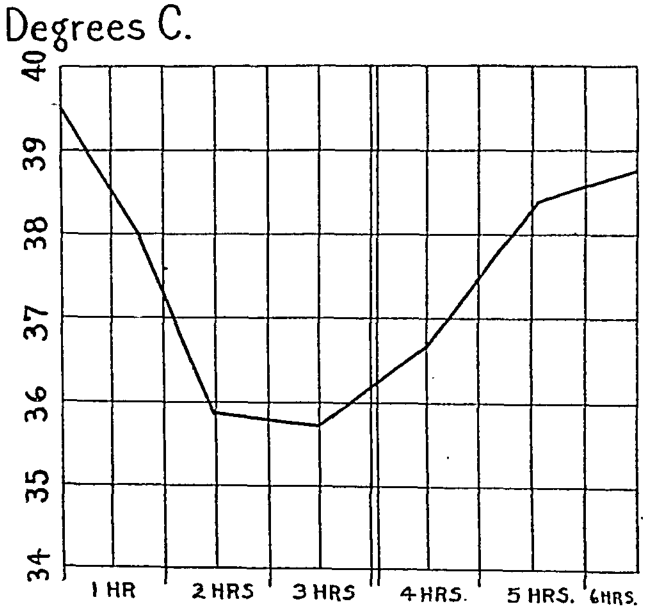


Fig. 1.—Experiment on a dog (1) showing depression of the temperature caused by 38 c.c. of a 5 per cent. solution of hydrated chloral (= 0.4 gm. hydrated chloral per kilo. dog). This solution, which about corresponds in strength to Somnos, caused less depression of the temperature than did the latter (cf. Fig. 2). The sleep continued about three hours.

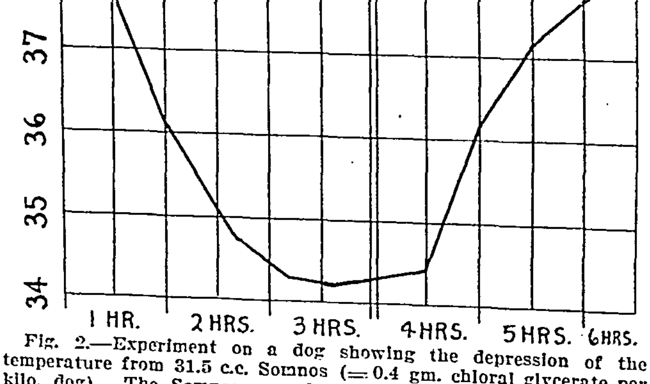


Fig. 2.—Experiment on a dog showing the depression of the temperature from 31.5 c.c. Somnos (= 0.4 gm. chloral glycerate per kilo. dog). The Somnos caused a greater depression of the temperature than did a solution of hydrated chloral of corresponding strength (cf. Fig. 1). Sleep continued about three hours.

In the following experiment a smaller dose of Somnos was given; the results show the inefficiency of small doses:

Experiment 3.—May 2, 1906. Yellow bitch, 5.98 kilos.
11 :00 a. m.—23.9 c.c. Somnos (containing 1.196 gm. chlorethanal alcoholate or 0.2 gm. per kilo.) given *per os.*
11 :25—Lying down, asleep most of the time; very easily aroused; gets up and seems normal, except for some incoördination. After a little the incoördination passed off, but she continued sleepy for about three hours; was easily aroused by snapping fingers.

Blood Pressure Experiments.—The following blood pressure experiments were made:

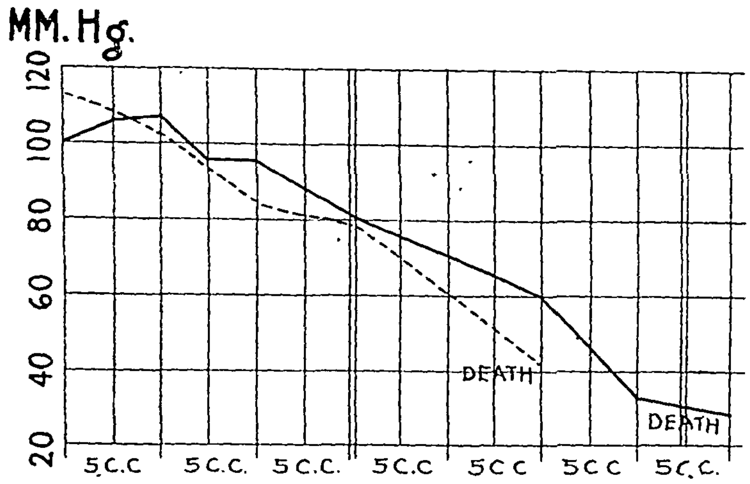


Fig. 3.—Showing the depression of the blood pressure from equal amounts of Somnos (dotted line) and a 5 per cent. solution of hydrated chloral (continuous line). The effect on the blood pressure was about the same, but death resulted from a smaller amount of Somnos than from a 5 per cent. solution of hydrated chloral. The figures on the left represent blood pressure in millimeters of mercury.

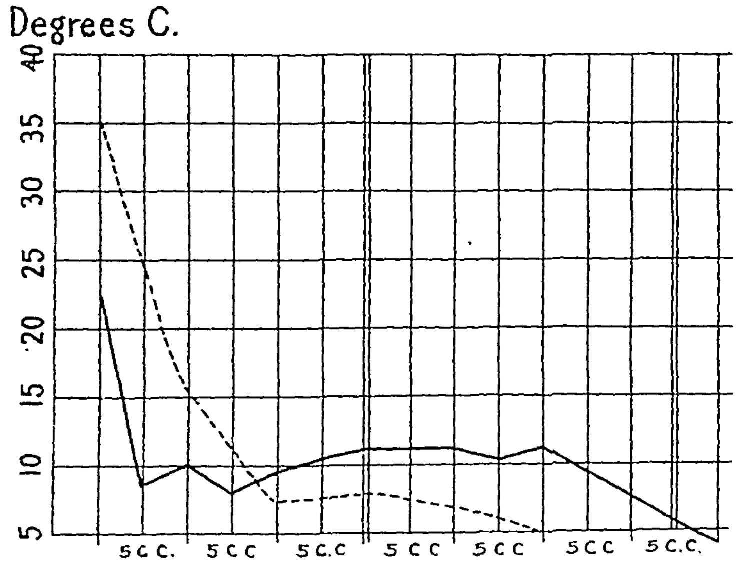


Fig. 4.—Showing the effect on the respiration of equal amounts of Somnos (dotted line) and a 5 per cent. solution of hydrated chloral (continuous line). The depression is about as great from the one as from the other.

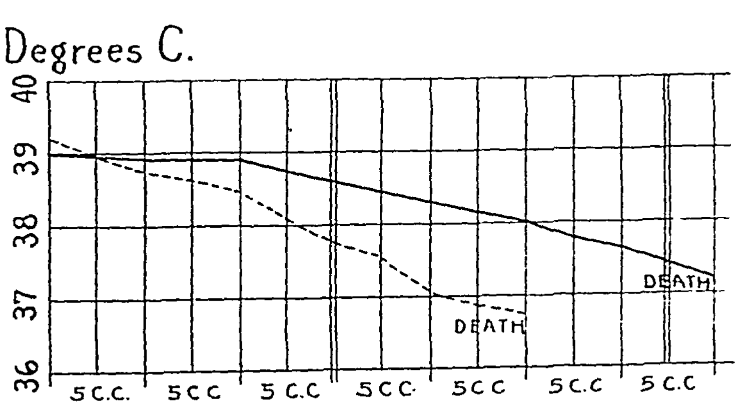


Fig. 5.—Showing the depression of the temperature from Somnos (dotted line) and hydrated chloral (continuous line). Somnos caused a greater fall of temperature than did an equal amount of hydrated chloral.

Experiment 1.—April 25, 1906. Rabbit, 2190 gm. Somnos injections into saphenous vein.

Time	Somnos injected c. c.	Du ation of injection, minutes	Respiration in 10 sec.	Blood pressure (carotid) in m m. mercury	Rectal temperature.
12 :36	....	....	....	....	39.2
12 :45	....	....	35½	114	....
12 :45½	5	2	....	....	....
12 :52	....	....	....	....	38.8
12 :59	....	....	15½	105	....
1 :21	5	1 ½	....	....	....
1 :23	....	....	....	....	38.6
1 :32	....	....	....	....	38.5
1 :49	....	....	7½	86	....
1 :50	5	1 1-6	....	....	....
2 :17	....	....	....	....	37.8
2 :20	....	....	8	79	....
2 :20 1-6	5	1 ½	....	....	....
2 :25	....	....	....	....	37.6
2 :45	....	....	....	....	37.1
2 :49	....	....	7	61	....
2 :49 1-6	5	1 ½	....	....	....
3 :12	....	....	....	....	36.8
3 :20	....	....	5½	42	....
3 :20 1-6	5	1 1-3	....	....	....

3 :22½, respiration ceased; 3 :24, heart ceased.

Experiment 2.—April 26, 1906. Rabbit, 2300 gm. Five per ce solution of hydrated chloral injected into saphenous vein.

Time	Hydrate chloral c.c.	Duration of injection, minutes	Respirations in 10 sec.	Blood pressure (carotid) in m. m. mercury	Rectal temperature.
12 :08	....	....	....	....	39
12 :12	....	....	23	100	....
12 :12 1-3	5	1	....	....	....
12 :19	....	....	....	....	38.9
12 :24	....	....	9	106	....
12 :50½	....	....	10	107	....
12 :51	5	1 1-6	....	....	....
12 :57	....	....	8 ½	96	38.9
1 :21½	....	....	9 ½	96	....
1 :22	5	1 1-3	....	....	....
1 :49	....	....	11	81	....
1 :49 1-3	5	1 ½	....	....	....
2 :17	....	....	....	....	38.3
2 :19	....	....	11	72	....
2 :19 1-6	5	2	....	....	....
2 :26	....	....	10½	....	....
2 :49	....	....	11	59	38
2 :49 1-3	5	1 ½	....	....	....
3 :06	....	....	....	....	37.8
3 :21	....	....	10	34	37.7
3 :21 1-3	5	1 1-3	....	....	....
3 :26	....	....	6	29	....
3 :38	....	....	4½	....	....
3 :40*	....	....	....	....	37.2

*3 :40, respiration ceased; 3 :42, heart ceased.

Results of these experiments are shown in Figures 3, 4 and 5. Many other similar experiments were performed. The results were very uniform and admit of the following conclusions: Somnos is slightly more toxic than a 5 per cent. solution of hydrated chloral in water; the narcosis produced by it is slightly deeper but the respiration and temperature are also correspondingly more depressed; the blood pressure was equally depressed. The physiologic action of Somnos is practically indistinguishable from that of a 5 per cent. solution of hydrated chloral in 10 per cent. alcohol; sometimes the one, sometimes the other produced a slightly greater effect (depending probably on individual variations in the animals) but witn the deeper narcosis there was invariably associated a greater depression of the respiratory center and of the temperature.

The urine of rabbits which had been given Somnos contained a levo-rotatory compound which reduced Fehling's solution readily; it was probably urochloralic acid, the same substance found in the urine after the administration of hydrated chloral.

Experiments on the effect of Somnos on the number of red blood corpuscles (on which the manufacturers lay considerable stress) have not yet been made; but surely no one experienced in blood work would attach much importance to experiments such as those described in the booklet on "Somnos," pages 6 to 10.[3] The method of administering the drug, the time at which the blood was taken for examination, the intervals between the different experiments are passed over without a word. It is very improbable that amounts of hydrated chloral varying from 1½ to 2 grains, amounts having no noticeable effect on a dog, would cause a reduction of 16 02 per cent in the number of red blood corpuscles.

---

[3] These statements are repeated, practically unchanged, in the report by W. H. Lippert, M.D., in Bulletin No. 1 of the American Pharmacologic Society.

In the absence of any proof, the statement on page 4 of the booklet "Somnos," that Somnos produces sleep by causing a contraction of the neurons and that it is the only hypnotic known possessing this property, is an insult to the intelligence of the physician

CONCLUSIONS.

To sum up our results on the physiologic action of Somnos: We have been completely unable to verify the claims of the manufacturers that Somnos is less toxic than hydrated chloral, or that it has a less depressing effect on temperature, respiration or circulation. On the contrary, the physiologic effects are indistinguishable from those of hydrated chloral, doubtless because the action of Somnos is simply the action of hydrated chloral. We can see nothing in the animal experiments or in the chemical composition which would suggest that Somnos would possess therapeutic advantages over an elixir of hydrated chloral of corresponding strength.[4]

It is to be hoped that physicians who have been blindly using Somnos without even knowing the strength of the preparation, much less what it is, will compare its effects with those of a 5 per cent. elixir of hydrated chloral[4]

The Vice of Generalizing.

According to Rupert Hughes, writing in the current *Harper's Weekly*, says a lay exchange, the habit of generalizing from single sentences is far too general and influential One would think, from some of the generalizations, he says, that the monopolists of money, for example, had also monopolized wickedness "Yet the news of the day will tell of preachers caught in plagiarism or adultery, of druggists selling poisoned soda water, of bakers vending unclean bread, of theological students cheating" Each trade, he says, has its graft The fact is that "drawing indictments against classes is as insane and illogical as drawing indictments against nations" There are "burglars who are chaste, and parsons who are sots there are rich women who are nuns of asceticism, and poor women who are so vilely extravagant as to bankrupt their ditch-digging keepers; there are poets who are domestic models, and plumbers who are voluptuaries; there are rich men who overwork, and poor men lazy enough to beg; there are millionaires' sons who are normal and athletic, and self-made men who are degenerates; there are robust athletes who are abnormal, and cigarette fiends who are leaders of progress; there are Sicilians who never saw a dagger and Puritans who seek vendetta with a knife or with poison; there are policemen who would reject a bribe, and senators who are devoted to their country; there are chorus girls of unimpeached repute, and Sunday-school teachers who commit infanticide."

The above is interesting to physicians, in so far as the comparison would apply with equal force to medicinal agents, whether official or proprietary. In the crusade against nostrums, some are inclined to go to the extreme. All nostrums are proprietary medicines, but by no means are all proprietaries nostrums. Just as the laborer is worthy of his hire, a fair reward should be allotted to the discoverer of a medicinal agent; but this reward should not be made perpetual. A coined word, trademarked, grants a perpetual monopoly, and hence should not be encouraged. But a patented article, or a patented process of manufacture gives protection for a limited time only, and is not necessarily to be condemned.

In a recent letter in The Journal, the following appeared in parenthesis: "I regret to say that this is also a proprietary remedy, but it seems to work well; possibly other silver compounds would do as well." Our correspondent evidently did not know that the preparations he had previously referred to in his communication are also proprietary. Universal condemnation of proprietary preparations will not help the work of ridding the medical profession of nostrums. We, therefore, appeal to our readers to use judgment, tempered with patience, in dealing with this troublesome question

Correspondence

The Walker Resolutions.

Kansas City, Sept. 6, 1906

To the Editor:—After reading Dr. Carstens' letter in The Journal, September 1, I desire, as the mover of the motion to lay the Walker resolutions on the table, to correct some erroneous impressions that have gained circulation regarding the reasons for tabling these resolutions

In the first place, I had no knowledge that such resolutions were to be introduced, nor had I been asked by any one to take any position relative thereto. When they were read, however, they at once impressed me as a covert attack on the honesty of the members of the Board of Trustees, and of the officers of the Association. I consider it necessary in any organization that a few men of capacity should have the main work fall on their shoulders Such an organization would always be called by others a "machine" I do not object to this name, as a machine is understood to be an instrument for the accomplishment of work through improved methods Admitting that there is a machine in the American Medical Association, in this sense, I would certainly find in that fact nothing objectionable. I fully believe that every member of the Board of Trustees and all the officers of the American Medical Association are perfectly honest, untainted by the slightest suggestion of personal graft, and it is, therefore, a machine in which I have full confidence.

In the second place, I was impressed with the idea that this resolution was introduced for ulterior purposes by influences which were antagonistic to the present policy and conduct of our Association and its journal. In this particular, I must fully support the course pursued by the Board of Trustees and the management of The Journal, and I believe that their course is approved by 90 per cent. of the profession. I was unwilling, therefore, to countenance any scheme, under any mask, whose chief purpose was to thwart the wishes of the American medical profession and to stop the good work which had been well begun.

---

[4] The booklet on Somnos, "Somnos, a Pharmacological Report, which is referred to here, contains a "Therapeutic Index to the Usefulness of Somnos" We give below a list of diseases mentioned in this index to show the wide range of usefulness (?) that is claimed for this chloral compound Abortions Abscess—of brain, kidney, liver, tonsils, paroid gland, mediastinum; in appendicitis, glanders, perinephritic, retropharyngeal, pyemic, pelvic, ovarian Somnos lessens pain and quiets nervous state Tablespoonful, repeated once or twice Use liberally Alcoholism—full doses, repeated often Gives calm sleep No blood changes like those produced by chloral Anemias—progressive and secondary Somnos has no deleterious action on blood as is common with other hypnotics Aneurism Angina Apoplexy. Appendicitis Arthritis Arsenical poisoning Arteriosclerosis Asthma Biliary colic Bright's disease Carbuncle Carcinoma Catarrh Cellulitis Cerebrospinal fever Chlorosis Cholecystitis Chordee Chorea Cirrhosis Coccydynia Colic Colitis Concussion Confusional insanity. Contusions Convulsions Coryza Cough Cramps Cystitis Delirium Diabetes Diarrhea Diphtheria Dropsy Dysmenorrhea Dyspnea Ear Emphysema Empyema Endocarditis Endometritis Epididymitis Epilepsy Erysipelas Fevers Fistula Gallstones Gastralgia or Gastrodynia Gastritis Gonorrhea Goiter. Gout Hallucinations Hay fever Headache Heart Disease Hemicrania Hiccough Hydronephrosis Hydrophobia Hydrothorax Hyperesthesia Hysteria Indigestion Inflammation Insomnia Kidney disease Laryngitis Liver abscess Cirrhosis Lobar pneumonia Lockjaw Locomotor ataxia Lumbago Mal de mere Malarial fever Meningitis Migraine Melancholia Metritis Morphinism. Muscular rheumatism Myelitis Myocarditis Myositis Nephritis Nervous dyspepsia Neuralgia, occipito cervical, etc Neurasthenia Neuritis Night sweats Orchitis Otitis media Paresthesia Paralysis Parotitis Peliosis rheumatica Pericarditis Perimetritis Perihepatitis Perichondritis Peritonitis Pertussis Petit mal Pharyngitis Phthisis Pleurisy. Pneumonia Post epilepsy Prolapsed uterus Pseudo angina pectoris Purpura Rabies Rheumatic fever Salpingitis Sarcoma Scarlet fever Smallpox. Spasms Stomach Stomatitis Sunstroke Tenesmus Tetanus. Tonsillitis Trauma Trismus Typhoid fever. Typhus fever. Ulcers Urticaria Varicella Vomiting Vulvitis Yellow fever

Finally, it struck me as the height of impudence that the mover of the resolution should lack sufficient confidence in the House of Delegates to permit it to name its own committee, should such a committee be desired. I certainly think, with no reflection on the names therein suggested, that a committee selected from the House of Delegates itself, where each member was more or less familiar with the matter in hand, would have been a more competent committee in every way. On the whole, therefore, the entire resolutions seemed to me to be uncalled for, improper and insulting, and for these reasons I made the motion to lay them on the table. I would judge that this same impression was produced on most of the members of the House of Delegates, since my motion was immediately seconded by several and unanimously carried.

It was evident that the principal desire in the minds of the members of the House of Delegates was to dispose of the resolutions in the quickest and most effective manner possible. The idea that the Trustees or the officers of the Association opposed or in any way hindered the adoption of the resolutions is absolutely contrary to the facts of the case, and palpably absurd.

Jabez N. Jackson, M.D.

State Board Results in the Educational Number.

Springfield, Sept. 1, 1906.

To the Editor:—The data collected and tabulated in the Educational Number of The Journal (Aug. 25, 1906), gives to the medical profession a compact arrangement of facts not obtainable elsewhere, but it is to be regretted that existing conditions are not such as to render the results of your immense labor more generally satisfactory. Much may be learned by any person by a careful analysis of your figures, but at the same time many of your deductions and conclusions would convey most erroneous impressions to the casual reader. Inasmuch as the great majority of your readers will glance at your results rather than consider the conditions surrounding the origin of your data, I feel that it would be wise more emphatically to impress the fact on them that deductions based on figures which are not uniform in significance are very apt to be misleading.

The peculiar results to which we may be led by figures and statistics may be illustrated by the following brief instances: In your Table E, page 590 (Colleges Grouped by States Showing Numbers Examined and Percentages of Failures), we find that graduates of Arkansas colleges of the years 1900-1905, were successful in 100 per cent. of cases in state board examinations, while the Arkansas graduates of 1899 and previous years failed in 50 per cent. of cases. We might infer from these percentages that in mental and educational attainments, recent Arkansas graduates stood at the highest possible place in the list of all states, and infer further that the marked difference in standing between old and recent Arkansas graduates indicated an astonishing improvement in Arkansas' educational institutions. These deductions are, of course, set at naught when we find that the total number of 1900-1905 Arkansas graduates examined was one and of those of 1899 and previous years but two. Had the 1900-1905 graduate failed on examination, Arkansas would have fallen to the lowest place on the list, 46 per cent. lower than any other state. Had the one who failed of the graduates of 1899 and previous years, been successful, Arkansas would have gained the topmost place for all years, with only Connecticut and Maine in the sisterhood of supremacy. Of course, these percentages have not the slightest weight in showing the relative standing of Arkansas colleges as compared with those of other states. The same is true of Connecticut, which is given an equally exalted place. Of graduates of 1899 and previous years, Connecticut had one. He passed on examination. The effect of his failure on the percentage of Connecticut colleges in your table is obvious.

Table G (Comparison of Results Obtained by the Graduates of Colleges in Their Own States and Elsewhere), shows Dearborn Medical College with 100 per cent. of successes in Illinois and with 100 per cent. of failures in "other states." The 100 per cent. of failures in other states represents the failure of one graduate in one other state. Without consideration of this latter fact, it might not unreasonably be surmised that Illinois had licensed all graduates of a college not one of whose alumni had proven acceptable to any other state.

In the system you have adopted to facilitate comparison of the different state boards in passing or rejecting applicants, figures are used which, it would seem, are hardly susceptible of comparison. You state editorially that in Kentucky and Colorado a number of applicants have been admitted without examination and that "these are included in figuring the percentage of rejections." Those so admitted in Colorado and Kentucky, seem, however, to have been included as successful. It would appear to me that to include these applicants either as rejections or as being successful renders more confusing a table which the casual reader, at least, had assumed to be for the purpose of showing results of examining boards.

Without burdening your columns with additional details, I should suggest the following points which must be given due consideration in comparing the results of the various state boards or colleges: 1. It is impracticable to compare the showing of a college whose graduates were examined exclusively by one board with the showing of another college whose graduates were examined exclusively by another board. It is impossible to tell whether the school or the board is responsible for the results. 2. The great majority of graduates in practically all schools are examined, first at least, in the states in which the individual colleges are located. Hence, the character of the schools in each state is an important factor in considering the severity or laxity of the examining boards of the state. 3. We may as well eliminate from our data the showings of colleges whose graduates have appeared before only a small number of boards, as these showings indicate little as to the ability of the graduates of such schools to pass the average state board examination.

The importance of these points may be briefly illustrated in the following: Of the 104 colleges listed by you, there were but 10 whose graduates had appeared before as many as twenty state boards. Of this group of 10, but two are found in your Table 1—those whose candidates were rejected in less than 10 per cent. of cases before all boards. The 8 colleges are located, 1 in Maryland; 1 in Michigan; 1 in New York; 2 in Pennsylvania and 3 in Illinois. In Maryland, Michigan, New York and Illinois, from 75 to 80 per cent. of all applicants examined were graduates of schools in those states. Michigan rejected but 1.6 per cent. of her own graduates; New York 1.9 per cent. of New York graduates and Illinois 2.8 per cent. of Illinois graduates. These low percentages of rejections of the graduates of the states' own schools were due to the fact that these states have the largest number of graduates of colleges who have received high recognition in the largest number of other states. Maryland, on the other hand, rejected a much larger percentage of her own graduates, but in Maryland it is noted that the three largest schools come in your Table K—having over 20 per cent. of failures. Without the foregoing facts, it might be assumed that these states dealt with undue leniency with their own graduates.

As to the standing given by your tables to Illinois, on which the foregoing figures have considerable bearing, I desire to say a word.

Illinois does not pretend to be a state in which exactions in medical examination are unusually severe. The statutes require that the examination "shall be of a character sufficiently strict to test the qualifications of the candidate as a practitioner," and the State Board of Health endeavors to carry out the provisions of the law. If the candidate shows sufficient evidence of his ability as a practitioner, it becomes the duty of the board to grant him a certificate.

The showing that Illinois rejects a smaller percentage of Illinois graduates than of those of other states is largely due to the fact that the board is called on to examine so large a percentage of graduates of Illinois colleges whose alumni receive uniformly high grades in all states and also to the fact that but 7 per cent. of the applicants appearing before the board and coming from outside the state represent those colleges showing less than 10 per cent. of failures. A word on this subject is warranted in view of the fact that, to the casual observer, the difference between the number of rejections among graduates of Illinois colleges and from outside colleges might appear as circumstantial evidence, at least, of discrimination against those from other states.

I am not sufficiently conversant with the examination methods of other states in which this evidence of possible discrimination appears in your tables, to speak authoritatively concerning them, but I can say, without possibility of successful rebuttal, that the Illinois method of examination practically precludes the possibility or discrimination either for or against any individual, any school, or any class of applicants.

The examinations of the Illinois State Board of Health are conducted by the secretary. None of the other members of the board attends or takes part in the examination. The secretary, however, has nothing to do with the preparation of the questions or the grading of the answers. The questions are prepared and the answers are graded by the other members. The identity of the applicant is unknown to the members who grade the answers. Each applicant is identified by a number. The number given the applicant at the examination is changed in the office of the board before the papers are submitted to the members, so that the papers of each applicant are graded under an entirely different number from that given the applicant at the time of examination—a number which can not be known to the applicant. The members examining the papers do not know and can not know, until after the papers are graded, whether the applicant comes from Maine or Illinois or California, and it might be said in this connection that no member, during the ten years in which I have been secretary, has ever manifested the slightest curiosity on the subject.

The Illinois State Board of Health acts as an examining board rather than as an examining and rejecting board, and the examinations are so conducted as practically to guarantee that all those who pass have done so fairly and honestly.

JAMES A. EGAN,
Secretary Illinois State Board of Health.

[Our correspondent's comments on Arkansas' percentage are correct, as far as Arkansas is concerned, but they do not apply to Connecticut, since the latter had a total of 30 applicants examined when the former had only 3. In our editorial accompanying the tables referred to, the following statement is made: "In making comparisons, besides the percentage, one must consider also the number examined and the number of state boards before which the college was represented." This applies to practically all the tables and particularly to Tables I, J and K, and if this is kept in mind there need be no misinterpretations. Table H was arranged particularly to show comparatively rejections by examining boards, and the terms "registered" and "rejected," instead of "passed" and "failed," as well as the comments on the table should prevent any one from thinking that it was based on examination only. States which register applicants on credentials without examination would certainly appear in a wrong light if those registered in such manner were not included in figuring the percentage of rejections. The methods adopted by the Illinois board in marking papers are interesting and may be of service to other examining boards.—ED.]

A National Examining Board.

CHICAGO, Sept. 1, 1906.

To the Editor:—To the extensive and rapidly growing literature of reciprocity in medical licensure may I add another contribution for the purpose of reviewing and elaborating a suggestion already made by others of a voluntary national examination and certificate?

In the address published in THE JOURNAL, August 25, Dr. Harvey has forcibly set forth the difficulties which stand in the way of interstate reciprocity. The examinations given by over sixty state and territorial boards are, and of necessity must long continue to be, so diverse in character and severity as to afford no satisfactory basis for any general reciprocity. Nor is any scheme of compulsory national licensure possible under our form of government. At the same time it is clearly the opinion of the large majority of contributors to this discussion that an examination and certificate by some central board under the control of the national government offers the most direct and satisfactory solution of the whole question.

The way is already paved for such a plan, by the fact that in many of the states medical officers of the Army, Navy and Marine-Hospital Service are already exempted from the operation of the medical practice acts. It only remains for such an examination to be open to any and every medical graduate who might wish to take it, paying therefor a suitable fee, and for the several state boards to accept the certificate obtained by the successful candidates in such examination.

In order that the tests proposed might furnish the best possible guarantee of the competence of those examined, certain conditions would have to be fulfilled. The examiners should be experts, each in his own medical branch. The board would not, therefore, be composed of Army and Navy surgeons, although the examinations should be conducted under the auspices and control of the medical departments of the U. S. Army and Navy, who would attend to the details of arranging time and place, keeping of records, issuing certificates and the like. The actual examiners should be recruited from the ranks of those who are engaged in teaching and research in the several medical sciences who would be detached from their teaching position by leaves of absence for the limited periods necessary for this duty. In order that the burden of this work might not fall unduly on any one person, no examiner should be expected to serve more than six or twelve months consecutively. By this plan the board of examiners would be composed of a professional anatomist from one college, a physiologist from another, a chemist from another, a surgeon from a fourth, etc., each of whom is an expert in his chosen line, familiar by long experience with the purpose and methods of examining.

We must come to recognize in this country, as they do abroad, that the business of examining is one demanding special training and experience, particularly in teaching, and that examinations can not be satisfactorily made by the average general practitioners who constitute the personnel of the several state boards. Moreover, it is a "narrowing" occupation of such restricted scope that exclusive devotion to it tends to unfit the individual for its duties. A changing board, such as is here proposed, renewed by the enlistment of fresh material every few months would be much more satisfactory and effective than a permanent board.

The examinations should be exhaustive, thorough and *practical*, extending as a rule over four to six days for each applicant, and comprising, as the most important features, actual tests of his ability in the various laboratories, in the actual examination of actual patients, the performance of dissections and operations on the cadaver and the like, as is the case abroad.

The same prerequisites should be exacted of candidates as are now demanded by the better state boards, such as evidence of graduation from a recognized medical college and certificates of good moral character.

The examinations might be held at suitable intervals in five or six of the largest cities of the country, where ample facilities could be secured for conducting them. The fee exacted of the applicants should be commensurate with the comprehensive and somewhat expensive character of the examination, and with the value of the certificate to be obtained. Every candidate could well afford to pay a fee at least as large as that now exacted by any of the state boards, for a certificate which would entitle him to practice anywhere in the United States at any time. It is believed that the income from such fees would be ample to meet the expenses of the board, including the payment of adequate compensation to the examiners.

It is difficult to see how any state board could refuse to recognize a certificate obtained by such an examination conducted by such a body of men; and accept it, too, not on the basis of an I-will-if-you-will reciprocity (an attitude which can never result in reciprocal licensure without a lowering of standards), but solely on the basis of merit.

It may be objected that the proposed plan offers no relief to the old practitioner who is sometimes compelled to migrate, not from mere "wanderlust," but by force of circumstances. Something must be done for these. The flippant manner in which their claims to just treatment are discussed in some of the recent contributions on the subject and dismissed by the state boards, argues an absence of appreciation of individual rights which ill befits a judicial body—for such as an examining board in the best sense should be.

May I add another case to the several which have been reported, showing how absurd, intolerable and indefensible is the present attitude of many of the state boards? A teacher in a prominent medical college had recently been invited to take the professorship of a special branch of medicine in the medical department of the state university of a western state. On applying for a license by reciprocity with the state in which he has successfully practiced for sixteen years, he is informed that owing to a ruling adopted by the board within a month, he must take the full examination. Naturally, being nearly twenty years away from his study of the fundamental branches, he hesitates to abandon his present position and practice to remove to a distant city, in the face of the very considerable risk of failing in the kind of examination—a purely written test of his book-cramming, memorizing ability—in which case he would be ineligible to practice in that state. And so this state university must fail to secure the accession to its medical faculty of a distinguished specialist, because of a three-weeks' old arbitrary enactment of the state board of medical examiners. This practitioner, like many others, would not hesitate to undergo a practical test of his real ability to practice medicine, and such an examination as has been here suggested he might successfully pass.

This plan is not offered, however, as a means of securing reciprocity for the older practitioner, but for the recent graduate, and to serve as a means of guarding the portals of the profession for the future. For all physicians who graduated previous to 1900, let us say, reciprocity should be universal. A physician who has been licensed by any state on any basis, and who is not disqualified from practice by any breach of moral or professional conduct, should be entitled to a license by reciprocity in every other state. The public is responsible by its neglect for the present conditions—the excessive number of cheap medical colleges and the consequent abundance of incompetent practitioners. No state has very much to boast of in this regard in comparison with the other states. Much as the community may desire to purge itself, or to exclude from its borders these incompetent physicians, for the existence of which the people themselves are responsible, it has no right to seek correction of present conditions at the expense of hardship and injustice to the innocent individual physician. The courts have ruled that retroactive medical practice statutes are unconstitutional within a state. Logically they are equally unjust as between states. Time alone, and death, will remove from the community the large number of poorly trained, ignorant physicians now in the profession. It should be the business of the state boards to guard the future. The plan of a voluntary examination and certificate by a national examining board, I believe, offers the best solution of the question.

John M. Dodson.

Interstate Reciprocity and Frauds in Medical Schools.

Detroit, Sept. 5, 1906.

To the Editor:—Under the above heading Dr. Dudley Tait, of San Francisco, a member of the California Board of Medical Examiners, calls attention to the necessity of coöperation of examining boards in the investigation of medical colleges, as follows:

> In the discussion of the perplexing problem of interstate reciprocity one important phase of the question has apparently been totally overlooked: the necessity of the coöperation of examining boards in the investigation of medical colleges. Forgetful of the fact that the origin of examining boards is directly traceable to the fraudulent acts of medical colleges, boards authorized by law to go behind diplomas are notoriously prone to accept diplomas as *prima facie* evidence of regular and complete college work.

In connection with the above Dr. Tait calls attention to the point that rejection of a diploma obtained under fraudulent conditions, in which fraud both the graduate and the college of graduation were concerned, in one state would not prevent the seeking of recognition of the rejected diploma in new fields or other states. He also writes in relation to holders of diplomas rejected by his board:

> They apply for registration or examination in other states, whe their credentials are often accepted without question. Now, we California to reciprocate with these states it would, *volens no volens*, open the door to all such medical bandits, thus defeating t purpose of the law. Surely, reciprocity under these conditions ca not be founded on justice.

In commenting on the above criticism of one of the phase of medical reciprocity I can only state that it is self-eviden from his remarks that Dr. Tait is not only unfamiliar with th requirements and methods of reciprocity, but he also fails t grasp the meaning and intent of the term "reciprocity," esp cially so as applied to the endorsement of the medical licens of one state by another state on the reciprocity agreemen under the qualifications of the American Confederation of ciprocating, Examining and Licensing Medical Boards.

Medical reciprocity is not in any sense an unlimited rec procity. It is rather limited or restricted reciprocity, or i dividual reciprocity. The medical acts of nearly all of th states contain the following provision:

> Where the requirement for license shall be deemed by the boar to be equivalent to those of this act.

The recognition of the license of another state obtained (i part only) through a diploma which was not recognized by th receiving board could hardly consistently be designated a equivalent qualification, especially so if the receiving boar had a record of the fraudulent nature of the qualification o which license was obtained.

Dr. Tait evidently thinks that medical reciprocity betwee states is an unlimited recognition of the official acts of eithe board concerned in the matter of qualification for license. careful reading of the reciprocity qualifications of the Amer can Confederation would absolutely dispel this view.

In addition, also, the confederation has adopted itemize standards of preliminary and medical education, which, if i any sense lived up to, even in spirit, and are included in th reciprocity agreement between states, make it necessary fo boards in investigating applications for endorsement not onl to go behind the diploma, but also the license, and ascertain th actual quality of both.

It is possible, as in the specific case mentioned by Dr. Tai for the possessor of a defective diploma to deceive or commit fraud on a state in reciprocity with California and thereby o tain registration, but to assume that California or any othe state, having knowledge of such fraud, would, through rec procity, be obliged to recognize a license of this nature, i little less than an irresponsible statement. The mere applic tion to the California board by the applicant under such co ditions would furnish the defrauded board with the informatio on which the license could be canceled rather than endorsed.

Dr. Tait credits me with the statement that I never hav had occasion to reject a diploma from a recognized medic school. I am positive there must be some error in this stat ment, whether made by myself or by some one else. As th executive officer of my board it is my duty and practice to g behind every diploma of whatever nature presented to th board for recognition and to examine every detail of th course and work in connection with the granting of su diploma, either in direct registration or in registration throu reciprocity. It has been my duty, in connection therewith, t reject a large percentage of the diplomas presented—seldom fo fraud, in nearly all cases for defective course—even when th colleges granting the diplomas have been on the approved list.

The objections to medical reciprocity (Dr. Harvey, secretar of the Massachusetts Board of Registration in Medicine, in hi article in The Journal, August 25, entitled "The Impracti bility of Interstate Reciprocity") are based wholly, as in the case of Dr. Tait, on the defective understanding of what medical reciprocity really means as practiced and a want of knowledge of the standards of reciprocity and the method of their administration. He lays special stress on the assumed danger of the lowering of the standards through reciprocity on the theory that a state with a high standard would be obliged to receive and endorse licentiates of other states having lower standards. In this connection he states that a practitioner unable to qualify in Massachusetts, for example, could go to a state having lower requirements and then return and register in Massachusetts through reciprocity.

In connection with the above he assumes that reciprocity is an unlimited and unrestricted reciprocity and eliminates the "equal requirements" provision of the law. He also fails to recognize the qualifications and itemized standards forming the agreement between states on which reciprocity is based, and which would create a most effectual barrier against all the evils he predicts.

A mathematician attempts to demonstrate his opinion and conclusion by a statement represented by figures. In his preliminary figures, however, he makes an error by recording that twice five is fifteen; he then produces a column of figures based on this error and finally shows the result and proves his conclusion in exact form. This is exactly what Dr. Harvey has done in his article, which as a literary effort, combined with high ideals and conscientious endeavor for proper methods, is beyond criticism. He is so completely in error in regard to the range and limitations of medical reciprocity, its practical meaning, its qualifications and standards and the methods of administration, that I can only compare the conclusion attempted in his article to the result attained, by the mathematician above quoted.

His attempt to prove his conclusions through the examination statistics of state boards is also equally unfortunate. For example, he compares, among other states, the percentage of failures in examination in Massachusetts with Michigan, the former state's percentage of failures being greatly in excess of that of the latter, and asks: How can an equitable reciprocity be possible under such conditions? He is satisfied that it is impossible and impracticable.

The explanation, however, is a simple one. Massachusetts admits not only the graduates of every chartered American and foreign medical college to her board examination for license, but also undergraduates, osteopaths or any others, with or without a smattering of medical education, are admitted and examined.

Michigan, on the other hand, has an exceedingly high itemized standard of preliminary and medical education, and her list of recognized medical colleges, in consequence, is a very limited one, and an applicant for examination must be a graduate of a listed college. Through her method of standard a graduate of a recognized medical college is accepted for examination, while another graduate of the same college and of the same year may be refused such examination. If a standard provision of the medical act is effective and properly administered and the list of recognized colleges meritorious, then the percentage of failures before the state board should be almost *nil*. A large percentage of failures would certainly indicate laxness in the administrative functions, for a college examines on a maximum of standard and a board examines on a minimum of the same standard. Eliminating accidents, therefore, graduates of properly accredited medical colleges should rarely fail in a state board examination. Comparing the actual requirements of Massachusetts with those of Michigan, is it to be expected or is it even possible that the percentage of failures of the latter should in any way equal the former?

Dr. Harvey is fearful that reciprocity will result in the leveling of the high-standard state with that of the low-standard state. In the possible event of a reciprocity agreement between Massachusetts *and Michigan in the* near or distant future, I can assure Dr. Harvey that only licentiates of his board who are graduates of colleges fulfilling in every detail the preliminary and medical standard of Michigan through her recognized college list would be accepted, and that these standards would not be in any degree lowered by such a process.

Under present conditions and standards, every licentiate of Michigan at the present day could qualify for endorsement of Massachusetts, but only a small percentage of Massachusetts licentiates could qualify for endorsement by Michigan or other state with equal standard. A fair and proper comparison of products does not tend to lower the quality of such products. The old story of the two grocery stores located far enough apart to prevent comparison or competition is in evidence. The removal of one of them to close proximity to the other will not result in the clean, tidy well-kept, well-stocked and well-managed grocery descending to the status of the other, which is an unclean, untidy, ill-kept, poorly-stocked and badly-managed affair. Just the opposite would result.

If the Massachusetts board will enter into reciprocity with some of the states having higher standards and better methods than those of Massachusetts, I can assure Dr. Harvey, who is without question a consistent and conscientious advocate of *better things in* medical qualifications, that the result will make possible a standard in Massachusetts which, under past and present conditions, has been impossible. B. D. HARISON.

The Anatomy of the Ear: A Criticism.

EVANSTON, ILL., Sept. 1, 1906.

To the Editor:—An article on "The History of the Mastoid Operation," by Dr. Frank Allport, in THE JOURNAL, July 14, 1906, contains certain errors regarding the anatomy of the ear that should not be allowed to pass unchallenged.

In the first place, the term middle ear is repeatedly confused with the tympanum and the two terms used as synonyms, whereas the cavum tympani is but a part of the series of cavities that make up the middle ear. The middle ear includes all the series of connected cavities extending from the opening of the Eustachian tube in the pharynx to the most remote mastoid cell.

In the second place, the antrum is frequently referred to as a mastoid cell. This is not at all the case. The antrum is quite distinct developmentally and pathologically from the so-called mastoid cells and as its scientific name, "Antrum tympanicum" implies, is a part of the tympanum as are also the recessus epitympanicus and recessus hypotympanicus.

On page 96 the following statement occurs: "Above the foramen ovale and at the angle of the inner tympanic wall and the roof or tegmen runs forward the bony portion of the Eustachian tube, its roof being continuous with that of the tympanum, aditus ad antrum and antrum." The author has confused the canal for the tensor tympani with the Eustachian tube. The bony plate forming the tegmen does not form any part of the roof of the Eustachian tube. The Eustachian tube lies directly beneath the canal for the tensor tympani.

The drawings for Figures 8, 9 and 10 are reproductions of drawings from Deaver's work on anatomy for which no credit is given, and are inaccurate and misleading in many ways as will be apparent to any one who has made a study of the relations of the parts represented. G. W. BOOT, M.D.

The Anti-Nostrum War Is Right.

SAINT LOUIS, Sept. 10, 1906.

To the Editor:—Just a word to express my endorsement of your editorial September 8. When I compare present conditions with what we have had a few years ago, the better organization, the increased *esprit de corps*, the local interest, the aggressive nostrum war and the "mute but eloquent" proof which comes to us with every issue of THE JOURNAL, I would be false to my ideas of right did I not express my appreciation.

The policy of THE JOURNAL toward the "patent-medicine" interests and those who support them is right. Its campaign in effecting local organizations and in building up state associations is right. *Its successful work in giving* us the best and most complete presentation of literature which we need each week is right. I know I am the better, the A. M. A. better, and THE JOURNAL better and more prosperous than ever before. "Let the galled jade wince," and let us lose no sleep.

WILLIAM PORTER.

Book Notices

UNCONSCIOUS THERAPEUTICS, or the Personality of the Physician. By A. T. Schofield, M.D., M.R.C.S. Second edition. Cloth. Pp. 317. Price, $1.50. Philadelphia: P. Blakiston's Son & Co., 1906.

The physician of to-day, perhaps more than any time in the past, is reminded of the value of the psychic element in therapeutics. That the profession takes some heed to these reminders is apparent by the appearance within two years of a second edition of Dr. Schofield's work. It covers the subject of the value to the physician of the impression that he makes consciously and unconsciously on the mind of his patient. The facts are, we might say, of universal recognition, but there are some of us in the profession who seem to need reminders of them from time to time. Perhaps some of us suffer under a disadvantage of a more correct appreciation of our limitations than others whose success is greater, with lesser qualifications. A little knowledge is said to be a dangerous thing but more is sometimes worse, as far as pecuniary success is concerned. The reading of this work ought to be profitable to very many of our profession and what Dr. Schofield says about the advisability of more attention being given to the subject of mental therapeutics in our medical instruction is very largely true. It does not follow that we should use quackish methods or deceive our patients—and the physician who does not have faith in scientific methods or who is a therapeutic nihilist is in danger of not being so very far removed from a quack. We know that we can do things for the benefit of our patients by material methods and should cherish our faith in them. Good looks and self confidence are not everything in medical practice, Mephistopheles to the contrary, notwithstanding. We mention this matter not because we think Dr. Schofield ignores it. but because in noticing a work like this one should perhaps guard against any overestimation of the special points which it so well and usefully emphasizes. The book is exceedingly readable and its occasional perusal will be interesting as well as probably useful in otner ways. It is certainly full of valuable suggestions by which some of us may profit.

A NURSE'S HAND-BOOK OF MEDICINE. By J. N. Henry, M.D., Clinical Professor of Medicine, Woman's Medical College of Pennsylvania. Cloth. Pp. 268. Price, $1.50. Philadelphia: J. B. Lippincott Company, 1906.

This book comprises the lectures delivered to the nurses of the Pennsylvania Hospital during the last four years. It deals entirely with medical cases and with the care of children. The chapters on personal hygiene and the hygiene of the sick room are practical, as also is the chapter on hypodermic medication, catheterization and the use of the stomach tube. The chapter on diet contains a number of good recipes, for which the author acknowledges his indebtedness to Miss Walker and to Miss Byerly of the Pennsylvania Hospital.

A COMPEND OF OPERATIVE GYNECOLOGY. Based on Lectures in the Course of Operative Gynecology on the Cadaver at the New York Post-Graduate Medical School and Hospital, delivered by W. S. Bainbridge, M.D., Adjunct Professor of Operative Gynecology on the Cadaver, New York Post-Graduate Medical School and Hospital, etc., Compiled with Additional Notes, in Collaboration with Harold D. Meeker, M.D., Instructor in Operative Gynecology on the Cadaver, New York Post-Graduate School, etc. Cloth. Pp. 66. Price, $1.00 net. New York: The Grafton Press, 1906.

This book is intended to serve as an aid to students in operative gynecology on the cadaver. The various operations are briefly described. The book concludes with "Miscellaneous Points," in which the different forceps, needles and methods of inserting sutures, of making incisions and of controlling hemorrhage are discussed.

Marriages

WILLIAM B. NYE, M.D., West Newark, Ohio, at Newark, August 30.

B. F. ZOBRIST, M.D., Jewett, Ill., to Miss Lillie A. Apple of Keysport, Ill., September 4.

HARVEY BRINTON STONE, M.D., Baltimore, to Miss Ethel Hoffman, at Baltimore. August 27.

EDWIN A. REISENFELD, M.D., to Miss Reta Kratzenstein, both of New York City, September 4.

THEODORE A. LAFFERTY, M.D., New Baltimore, Mich., to Miss Mabel Lindahl of Detroit, August 30.

CARL WILHELM YOUNG, M.D., Philadelphia, to Miss Freida Rippelmeyer of Baltimore, August 22.

LOUIS H. RUEGNITZ, M.D., Webster City, Iowa, to Miss Grace Kilburn Meigs of Chicago, September 3.

CHARLES BURR CALDWELL, M.D., Bethany, Ill., to Miss Lydia Stevenson of Monticello, Ill., August 30.

GEORGE BURNSIDE STOREY, M.D., to Miss Grace Edna Watkins, both of Portland, Ore., September 5.

ALBERT GEORGE JENNER, M.D., Milwaukee, to Mrs. Birdie M. Weston of St. Louis, at Chicago, August 28.

MARVIN D. HUBBELL, M.D., New York City, to Miss Alma Hathaway Jones of St. Louis, September 1.

HENRY BASCOM THOMAS, M.D., Chicago, to Miss Louise Downing Wendell of Louisville, Ky., September 5.

HAL BAILEY BROWNELL, M.D. Buffalo, N. Y., to Miss Irene Helen Trowbridge of Toledo, Ohio, September 1.

ANSON LE ROY NICKERSON, M.D., Momence, Ill., to Miss Laura May Chesney of Bucyrus, Ohio, August 29.

WILLIAM PROVINCE GARSHWILER, M.D., Indianapolis, to Mis Florence Maria Province of Franklin, Ind., September 12

Deaths

Millard P. Sexton, M.D. University of the State of Missouri, Medical School, Columbia, 1880; a member of the American Medical Association, Medical Society of the State of Missouri, Kansas City District Medical Society and Jackson County Medical Society; secretary of the Eastern Kansas Medical Society: fellow of the Kansas City Academy of Medicine; professor of diseases of the mind and nervous system in the College of Physicians and Surgeons, Kansas City, Kan.; formerly physician to State Hospital for the Insane No. 1, Fulton; superintendent of the Bonner Springs (Kan.), Sanatorium; neurologist to Bethany Hospital, Kansas City, Kan., died at St. Luke's Hospital, Denver, September 5, after a short illness aged 50.

Edith Warner Cadwallader Crowder, M.D. Woman's Medica College of Pennsylvania, Philadelphia, 1900; formerly a member of the American Medical Association and of the Philadelphia County Medical Society, and professor of obstetrics in th Woman's Medical College of Pennsylvania, died at her home i Chicago, Aug. 18, 1906. On her marriage to Dr. Thomas F Crowder of Chicago, in October, 1905, all her medical appointments were resigned.

Samuel A. Buchanan, M.D. Department of Medicine of th University of Pennsylvania, Philadelphia, 1893: a member o the American Medical Association, Medical Society of the Stat of Pennsylvania and Philadelphia County Medical Society surgeon of the Baltimore & Ohio and Pennsylvania Systems died in the Polyclinic Hospital, Philadelphia, August 26, from septicemia, after a prolonged illness, aged 40.

Ludwig H. Van Ghoren, M.D. Charity Hospital Medical College, New Orleans, 1876; at one time a member of the New Orleans board of health; for several terms a member of th City Council of Bay St. Louis, Miss.; mayor pro tem and a member of the board of health of the city, died at his home August 31, after an illness of nearly a year, aged 62.

David V. Yerex, M.D. Bellevue Hospital Medical College, New York City, 1869; a prominent and influential citizen of Imlay City, Mich.; for two years member of the Lapeer County poo board, died in Harper Hospital, Detroit, August 27, four day after an operation for intestinal obstruction, from shock without having regained consciousness, aged 61.

George Mackie, M.D. Long Island College Hospital, Brooklyn 1874; a member of the American Medical Association, th Massachusetts Medical Society and Bristol County Medica Society; one of the most prominent and esteemed physicians o southeastern Massachusetts, died at his home in Attleboro Mass., August 31, after a short illness, aged 56.

Abram Irvin Clarke, M.D. University of Virginia, Medica Department, Charlottesville, 1845; who served for severa terms as a representative from Campbell County, Va.; some time president of the board of health of Lynchburg and of the Lynchburg Academy of Medicine; the oldest physician of the city, died at his home, August 31, aged 89.

Alexander K. MacLean, M.D. Toronto University, 1897, of Chicago; professor of otology, rhinology and laryngology in the Chicago Eye, Ear, Nose and Throat College, and instructor on diseases of the eye, ear, nose and throat in the Illinois Medical College, Chicago, died from acute dysentery at Battleford, Sask., August 12.

James A. Finn, M.D. Harvard University Medical School, 1875, of Roxbury, Mass.; for 28 years attending physician to the Home for Deaf Mute Catholic Children, and for many years medical examiner to the House of the Good Shepherd and St. Vincent's Infant Asylum, died in Carney Hospital, Boston, September 1, from cancer.

Orlando Miller Woodrow, M.D. Kentucky School of Medicine, Louisville, 1894; a member of the American Medical Association and of the Jackson County (Ohio) Medical Society; a practitioner of marked ability, died at his home in Wellston, Ohio, August 24, from brain abscess, after an illness of three years, aged 38.

Arthur Barlow, M.D. Memphis Hospital Medical College, of Willow Hole, Texas; a member of the Madison County (Texas) Medical Society and of the Brazos Valley Medical Society, died at Zulch, Texas, March 29, from uremic poisoning, after an illness of one week, aged 40.

lumbus G. Slagle, M.D. University of Louisville Medical Department, 1861, a member of the American Medical Association and an old resident and practitioner of Minneapolis, Minn., died at his home in that city, August 27, from heart disease, after a short illness, aged 72.

Richard Rush Hanley, M.D. Jefferson Medical College, Philadelphia, 1852; a member of the first board of supervisors of Fremont County, Iowa, and for several years justice of the peace at Tabor, died at the home of his son in Shenandoah, Iowa, August 4, aged 77.

Henry C. Thatcher, M.D. Eclectic Medical Institute, Cincinnati, 1887, of Youngstown, Ohio, a specialist on diseases of children, died at the Mahoning Valley Hospital, Youngstown, from spinal tuberculosis, September 2, after an illness of two years, aged 40.

Neilson Abeel Baldwin, M.D. Medical Institution of Yale College, New Haven, 1861, of Brooklyn, N. Y.; a member of the American Academy of Medicine, died in Seney Hospital, Brooklyn, August 29, after a surgical operation, aged 67.

Clement Clay Greene, M.D. Southern Medical College, Atlanta, Ga., 1881, formerly a widely known practitioner of Atlanta, Ga., who had been an invalid for about six years, died in his apartments in Atlanta, September 2, aged 49.

Harriet S. French, M.D. Penn Medical University, Philadelphia, 1865, said to have been the oldest woman practitioner in Philadelphia, died at her home in that city, from heart disease, following a cerebral hemorrhage, September 5, aged 82.

Daniel Ream, M.D. Eclectic Medical Institute, Cincinnati, 1867; state senator in 1872, and formerly sheriff and coroner of Siskiyou County, Cal.; for more than 50 years a practitioner of Yreka, died at his home in that city, September 1.

Isidore Fregeau, M.D. Ecole de Médécine et de Chirurgie, Montreal, 1861; for one term a member of provincial parliament from Sherbrooke County, died at his home in Sherbrooke, Quebec, September 2, aged 72.

Ira W. Johnson, M.D. Mobile (Ala.) Medical College, 1906; a member of the Shelby County Medical Society, died at his home in Calera, Ala., August 5, from the effects of an overdose of tincture of aconite root, aged 25.

John Henry Weaver, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1873, of Altoona, Pa., died at the home of his son in Greensboro, Md., from cerebral hemorrhage, August 18, aged 75.

Ernest Woolfolk, M.D. University of Virginia Medical Department, Charlottesville, 1876, died at his home in Thornhill, near Lahore, Va., August 25, from disease of the stomach, after a long illness.

Benjamin E. Hays, M.D. Bellevue Hospital Medical College, New York City, 1870, of New York City, a veteran of the Civil War, died in the Presbyterian Hospital, New York, August 19, aged 69.

James A. Leech, M.D. Columbus (Ohio) Medical College, 1886, workhouse physician of Columbus, Ohio, died at the home of his sister in Cambridge, Ohio, from an overdose of morphin, August 29, aged 43.

Alexander Thomasson Dozier, M.D. Louisville Medical College, 1849, who had given up practice for a number of years, was accidentally burned to death in Auburn, Cal., Dec. 25, 1905, aged 84.

William B. Watkins, M.D. University of Louisville Medical Department, 1857, one of the most prominent practitioners and citizens of Clay County, Miss., died at his home in Big Springs, August 31.

Albert Whitlock, M.D. Pulte Medical College, Cincinnati, 1878, died at his office in Wichita, Kan., August 31, from hemorrhage of the lungs, after an illness of about four months, aged 50.

Edward J. Chapman, M.D. Rush Medical College, Chicago, 1871, died at his home in Missouri Valley, Iowa, August 28, from locomotor ataxia, after an illness of four years, aged 61.

Henry Austin Gould, M.D. 1874, a former practitioner of Hammond, Wis., died in Minneapolis, August 7, from cholera morbus and nephritis, after an illness of two days, aged 82.

Andrew Klingberg, M.D. Rush Medical College, Chicago, 1869, died at his home in Osage City, Kan., August 10, from nephritis, after an illness of about three years, aged 67.

J. Thompson Morton, M.D. Medical College of Georgia, Augusta, 1900, of Keysville, Va., died from typhoid fever in a hospital in Richmond, Va., August 30.

Harry L. Helper, M.D. Department of Medicine of the University of Pensylvania, Philadelphia, 1888, died at his home in Reading, Pa., August 18, aged 43.

Charles E. Howland, M.D. Eclectic Medical Institute, Cincinnati, 1865, died at his home in Adrian, Mich., September 1, after a lingering illness, aged 75.

Henry F. Graetzel, M.D. Baltimore University School of Medicine, 1893, died at his home in Baltimore, August 30, from disease of the stomach, aged 76.

Charles W. Musgrove, M.D. Jefferson Medical College, Philadelphia, 1879, died at his home in McEwensville, Pa., July 29, after a long illness, aged 62.

Justus Beebe (Examination, Michigan), died at his home in Wixom, Mich., April 22, from angina pectoris, after an illness of three days, aged 68.

John Jay Higgins, M.D. College of Physicians and Surgeons in the city of New York, 1850, died at his home in New York City, August 28, aged 79.

James Ambrose Osborne, M.D. Hahnemann Medical College and Hospital, Chicago, 1897, died recently at his home in Harmony, Pa., aged 35.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

MERCURY SOZOIODOLATE.

Kwang Ju, Korea, Aug. 2, 1906.

To the Editor:—Please tell me what Lengfeld's solution is. How is it used in syphilis?

J. W. Nolan.

Answer.—Probably our correspondent refers to a solution of mercury sozoiodolate recommended by Dr. Garceau of San Francisco in an article published in the *Journal of Cutaneous Diseases,* June and July, 1906, and prepared for him by F. Lengfeld, chemist. This solution contains 0.5 per cent. of mercury as sozoiodolate held in solution by sodium iodid. This proportion is advantageous in that one can calculate the amount of mercury, since each twenty minims contains 1/10 of a grain of mercury. The sozoiodolate of mercury dissolves in 500 parts of water, but is readily soluble in solutions of sodium chlorid or of other halogen salts. It is a fine yellow powder which should dissolve with slight turbidity to the extent of 0.5 gm. (7½ gr.) in 30 c.c. (one ounce) of water on the addition of 1.5 gm. (22½ gr.) of comon salt. The following formula is given by Hager (Handbuch der Pharmaceutischen Praxis) as suitable for hypodermic injection:

℞.	Hydrargyri sozoiodolatis	gr. xii	|8
	Potassi iodidi	gr. xxiv	1|6
	Aquæ dest.	℥iss	10|

M. Sig.: For subcutaneous injection.

To produce the strength specified by Garceau we need a solution containing 1,336 per cent. of sozoiodolate. Using the same relative proportion of sodium iodid as of potassium iodid in the above formula we arrive at the following formula, which must closely represent the formula of Garceau in the article referred to:

℞.	Hydrargyri sozoiodolatis	gr. 2.4		156
	Sodii iodidi	gr. 4.8		312
	Aquæ dest.	gr. 150	10	

Sozoiodolate of mercury, a mercury salt of di-iodo-paraphenolsulphonic acid, $C_6H_2.OH.I_2.HSO_3$, is to be obtained of the various dealers in chemicals. Twenty minims of the solution are injected into the buttock with the usual precautions for asepsis. Swabbing with ether may be used to cleanse the skin and at the same time produce a mild anesthesia. A trochar needle is quickly plunged into the gluteus muscle, the trochar removed, and, if there is *no oozing from the wound*, the barrel of the syringe is attached to the needle and the injection made. Massage of the site of injection relieves pain materially and tends to prevent nodulation.

COMPARATIVE VALUES OF SILVER PREPARATIONS.

JEFFERSON CITY, MO., Aug. 21, 1906.

To the Editor:—Will you please give in your "Queries and Minor Notes" the relative and comparative germicidal value of "protargol," "argyrol," and "nargol," as found by disinterested parties, by both laboratory and clinical tests? Argyrol, I know, is less irritating, but has it the same germicidal properties, grain for grain, when compared with protargol? J. A. HILL.

ANSWER.—In the discussion on a paper by Myles Standish in THE JOURNAL, June 17, 1904, page 1854, the comparative values of silver nitrate, protargol and argyrol in the treatment of purulent conjunctivities are considered. The consensus of opinion was that the effectiveness of protargol and argyrol is about the same, except in gonorrheal opthalmia, when the cornea is involved, in which case better results seem to be obtained with protargol. It has been assumed by S. Fränkel (Arzneimittel-Synthese, 2d edition, p. 611) that the germicidal value of freely soluble compounds of silver with albumins depends on the percentage of silver which they contain. The recent report (see abstract, p. 398, this issue) of Marshall and Macleod Neave to the therapeutic committee of the British Medical Association, however, indicates that the bactericidal power has no definite relation to the percentage of silver since they found that argyrol, which is said to contain 25 per cent. of silver, produced very little bactericidal effect. while nargol, containing 10 per cent., and protargol, containing 8 per cent., were strongly bactericidal, and of about equal value.

LACTOPHENIN AND ASPIRIN.

CORONADO BEACH, CAL., Aug. 24, 1906.

To the Editor:—Will you kindly publish in THE JOURNAL some reliable information regarding lactophenin and aspirin, especially as to their pain relieving properties. The literature I have received from the proprietors of these preparations is written by obscure *men, and, as it is uniformly favorable, it is,* in my opinion, unreliable. X. Y. Z.

ANSWER.—Lactophenin is chemically very similar to phenacetin. While phenacetin is acetparaphenetidin, lactophenin is lactparaphenetidin; while phenacetin contains an acetic acid group, lactophenetidin contains a *lactic acid group*, and because of this lactic acid group, the compound is more soluble than phenacetin. Therapeutically also it is similar to phenacetin, and possibly it acts somewhat more energetically because of greater solubility. Aspirin is acetyl-salicylic acid and is produced by heating together salicylic acid and acetic anhydrid or chlorid. It is not changed in the stomach, but is decomposed in the intestine, forming a salicylate. It may be regarded as a useful substitute for salicylic acid, possessing essentially the same sphere of therapeutic action, with certain advantages over the older drug, the chief being that it is not decomposed in the stomach, and hence is not so likely to give rise to gastric irritation. H. C. Wood says: "It has been used by good clinicians with asserted good results, to depress the temperature in fevers, and has been highly praised as a means of subduing pain in migraine, neuralgia, and even in the fulgurant agonies of locomotor ataxia." Some by-effects have been reported by O. Meyer (*Deutsch. med. Wochnschr.*, vol. xxxix, No. 7) and Winckelmann (*Muench. med. Wochnschr.*, vol. l. No. 42). R. Freund reports three cases of drug eruptions occasioned by it (*Muench. med. Wochnschr.*, vol. lii, No. 15, April 11, 1905). It is controlled by *patent in the United State*, but not elsewhere. The consequence is that in this country the use of a very valuable therapeutic agent is restricted by its unnecessarily high price as compared with the prices in foreign countries, where it is not protected by patent.

A STRYCHNIN TOXIN.

TOLEDO, O., Sept. 6, 1906.

To the Editor:—Kindly tell me whether there is a toxin which produces the following train of symptoms: During our warmest weather a man had, for a week, so much soreness along the entire length of the spinal column that in the morning he had difficulty in getting out of bed; but after he had forced himself to get up, and had moved around for a time, he had, during the rest of the day, only an aching sensation in his back. After a warm bath in the morning he began to perspire profusely, felt a little nauseated, and in about half an hour began to have tonic muscular contractions in the right arm, and in the course of an hour the contractions had involved all of the voluntary muscles of the body, excepting those of the face. The contractions would last as long as a half minute sometimes, but generally were of shorter duration. The flexors and extensors seldom contracted at the same time; the forearm, for example, would be very strongly flexed on the arm for a while, when those muscles would let go, and the extensors would suddenly just as powerfully straighten the arm, making him strike the back of the hand on the floor until his hands were bruised by the blows. He was entirely rational and conscious all of the time, and when an arm or leg or any part of the body was in the spasm, would want it rubbed as hard as a strong man could rub it. The muscles of the arms, legs and back seldom contracted at the same time, though they were sometimes in spasm at the same time. Opisthotonos was often very marked; and he complained occasionally of the tongue drawing- just like his arms. The muscles might all remain quiet for five minutes, and again might contract a half dozen times in three minutes. The day that the convulsions came on was one of the warmest of the season. He was on the floor, and said that ice rubbed along the spinal column was very grateful to him. One grain of morphin given hypodermically within an hour did not relieve the contractions, but chloroform did so. After the first day ½ grain of morphin morning and evening controlled most of the contractions, though any movement of the body was likely to cause momentary contractions some place. There were no eye symptoms, and until the end of the third day he had no temperature; then for two days it was 100, then went to normal, where it remained. Now, at the end of two weeks since the attack, all of the muscles, except the large muscles of the back, are free from pain and soreness; but any use of the back muscles causes him pain about as they did the week before the spasms of the muscles came on. Thinking that the man was being poisoned from some source, and most likely from the intestinal tract, he was given, all through his sickness, 15 grains of acetozone every twenty-four hours. Drs. McVetey and Kirkley saw the man in consultation, and if there is a toxin which will cause such symptoms, we will be obliged if you will tell us what it is, and where we can find it described. J. L. TRACY.

ANSWER.—Strychnin-like substances have been isolated from decomposing organic mixtures, especially from moldy corn meal. The substance obtained from corn meal is really a mixture of ptomains which give color reactions similar to strychnin, but the physiologic action of some of them is very different from strychnin. Selmi was able to extract from corn meal a base which produced tetanic convulsions and also gave reactions similar to strychnin, but differed from it in the fact that it could not be extracted with ether. A base obtained by Gautier and Etard from decomposing flesh produces tetanic convulsions toward the end of its action (Vaughan and Novy, "Ptomains and Leucomains," 3d edition, 1896, p. 316). Tetanin has been isolated by Brieger from cultures of tetanus bacilli (Ibid., p. 398), and produces most of the symptoms of tetanus. C. P. Howard states (*Amer. Jour. Med Sci.*, February, 1906), that Ewald has isolated a peptotoxin from the urine in cases of tetany. In cases like the one described, it is probable that the toxin is produced in the alimentary canal, provided of course, that the case is one of toxemia. Care should be taken in making the diagnosis to distinguish from strychnin poisoning, tetanus, possibly hysteria and tetany. For the diagnosis of the latter see Howard's article.

THE PHYSICIAN'S LIBRARY AND THE FILING OF CLIPPINGS FROM JOURNALS.

WHITEWRIGHT, TEX., Aug. 31 ,1906.

To the Editor:—To the suggestions embodied in your reply to Dr. E. A. Hines in THE JOURNAL, Aug. 25, 1906, allow me to add that I find it easy to preserve and find all my medical literature. To do this it is necessary only to procure an ordinary straight punch, some stiff cardboard, and cheap shoestrings. I punch a pair of holes at the top and two at the bottom of the back of each number, and file it on the loops of shoestrings and tie. I string on and tie each number as it comes from the mail, and when the index arrives I put it on, and then the last cardboard for the back. My weekly medical literature constitutes by far the most important part of my library. For instance, after reading the article in THE JOURNAL, Aug. 18, 1906, on "The Relations of Gastric Acidity to Gastric Symptoms," I immediately turned to my text-book on "Diseases of the Stomach," now two or three years old, and annotated on the margin: "J. A. M. A., Aug. 18, '6, p. 496." There is room along the margins for indices of the important current articles for four or five years. Using this method I do not mutilate my weekly periodicals.

S. H. LANDRUM, M.D.

GALVA, KAN., Aug. 27, 1906.

To the Editor:—Noticing the query of Dr. Hines and your answer in THE JOURNAL, Aug. 25, 1906, page 609, I should like to recommend a method I have used for a number of years and found very satisfactory. It was given me by one of my instructors in college, Dr. Hickey, of Denver. It consists in making a note on the margin of the page treating of that particular subject in the text-book most often referred to, of the name or initials, volume and page of the journal in which the article to be referred to is to be found. For example, in an old edition of Osler, under etiology of smallpox, opposite the sentence, "The nature of the contagion of smallpox is still unknown." I have this reference: J. A. M. A., vol. xl, pp. 1221 and 1233. This refers to Dr. Councilman's report of the discovery of the germ of smallpox. By this method physicians can keep their text-books constantly up-to-date.

C. D. Weaver.

Durand, Ill., Sept. 4, 1906.

To the Editor:—In reply to your correspondent in the issue of August 25, I would suggest a plan that I have followed for several years of indexing my journal reading. It is simple, practical, and requires but a very short time to make an entry, and although it sometimes takes a little time to find the reference if it is far back and there is much uncertainty as to when I read the article, still it serves the purpose admirably. I procure a small blank book and keep it convenient to my reading desk. When I read an article that I may want to refer to again I enter the title in my blank book in black ink, under that the name of the author and the journal, giving volume number and date in red ink. The following is a sample, letting italics indicate red ink:

Some Phenomena of Tuberculosis Infection.
Wm. Porter, A.M., M.D.
J. A. M. A., xlvi, 21, 5-26-'06, p. 1573.

If some time later I wish to look up the article by title I run my eye over the pages, observing only that in black ink; if by the author, I carry my eye over the red ink only. When a volume of each journal is complete I tie it in a bundle, attach a tag on which is written the name of the journal, the volume and the dates of the first and last numbers, and shelve them where they are convenient of access. Thus each volume of a journal becomes a part of my library, and almost as easy to consult as a bound volume.

George M. Haines.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Sept. 8, 1906:

Loving, R. C., and Whaley, A. M., asst.-surgeons, granted leave of absence for one month and authorized to return to the United States via the Suez Canal on one of the transports to leave Manila, P. I., for New York City, on or about Sept. 1, 1906.

Boyer, Perry L., asst.-surgeon, left Camp of Instruction, Austin, Texas, with 2d Battalion Field Artillery, marching to Fort Sam Houston, Texas.

Fife, J. D., asst.-surgeon, reports departure from Fort Slocum, N. Y., on detached duty with recruits, and on arrival at Boise Barracks, Idaho, to avail himself of seven days' leave of absence.

Bartlett, C. J., asst.-surgeon, relieved from further duty at Camp of Instruction, Murray, Washington, and ordered to report to the commanding general, Department of California, for duty.

Havard, Valery, asst.-surgeon general, on adjournment of the Association of Military Surgeons, Buffalo, N. Y., will proceed to Camp Roosevelt, Mount Gretna, Pa., for observation of the medical department in the field and inspection of new sanitary methods and appliances in use at the camp; on the completion of this duty he will proceed to Camp of Instruction at Fort Benjamin Harrison, Ind., for similar duty, and then return to his proper station.

Mason, C. F., surgeon, will proceed to Camp Chickamauga, Ga., to observe the methods of instruction and organization of the medical department in the field, and to inspect the new sanitary methods and applances in use at the camp; on the completion of this duty he will return to his proper station.

Darnall, C. R., asst.-surgeon, will proceed to the Camp of Instruction at Fort Riley, Kan., for observation of the methods of instruction and the organization of the medical department in the field, and to inspect the new sanitary methods and appliances in use at the camp; on the completion of this duty he will return to his proper station.

Phalen, J. M., asst.-surgeon, left Camp of Instruction, near Austin, Texas, en route to station, Fort Logan H. Roots, Ark.

Miller, E. W., asst.-surgeon, left Camp of Instruction near Austin, Texas, with the 1st U. S. Cavalry, en route to station, Fort Clark, Texas.

O'Reilly, R. M., brig.-gen., reappointed Surgeon-General, U. S. Army, for the period of four years, from Sept. 7, 1906.

Arthur, W. H., surgeon, granted ten days' leave of absence.

Purnell, H. S., asst.-surgeon, leave of absence extended one month.

Byars, C. R., cont.-surgeon, returned to duty at Jefferson Barracks, Mo., from practice march with 3d Squadron, 9th Cavalry.

Stone, F. P., dental surgeon, left Camp Mabry, Austin, Texas, for Fort Sam Houston, Texas.

McCallum, F. M., cont.-surgeon, granted leave of absence for one month, to take effect on his relief from his present duties.

Carpenter, Alden, dental surgeon, left Vancouver Barracks, Wash., and arrived at Camp Tacoma, Wash., for the purpose of attending to the necessary dental work of officers and enlisted men at that camp.

Jordan, E. H., left Denver for San Francisco to take transport to sail for Philippine Islands, Sept. 5, 1906.

Whinnery, J. C., dental surgeon, left Fort Flagler, Wash., and arrived at Vancouver Barracks, Wash., for duty.

Daywalt, cont.-surgeon, sick leave of absence extended one month.

Leeper, J. F., cont.-surgeon, returned to duty at Fort Duchesne, Utah, from Camp of Instruction near Fort D. A. Russell, Wyoming.

Chase, A. M., cont.-surgeon, left Camp of Instruction near Austin, Texas, with 1st Cavalry, en route to his station, Fort Reno, Oklahoma.

Stone, F. P., dental surgeon, granted fourteen days' leave of absence.

Van Kirk, H. H., cont.-surgeon, left Fort Sill, Okla., on leave of absence for one month.

Thorp, C. W., cont.-surgeon, returned to duty at Fort Ethan Allen, Vermont, from leave of absence.

Wolven, F. H., dental surgeon, left Fort Terry, N. Y., and arrived at Fort Trumbull, Conn., for duty.

Navy Changes.

Changes in the medical corps, U. S. Navy, for the week ending Sept. 8, 1906:

Medical Director R. A. Marmion, to be placed on the retired list of officers of the navy, Sept. 6, 1906, in accordance with the provisions of Section 1444 of the Revised Statutes.

Surgeon L. W. Curtis, detached *Pensacola*, Naval Training Station, San Francisco, etc.; to home and wait orders.

Surgeon C. E. Riggs, detached Navy Yard, New York, N. Y., etc.; to *Pensacola*, Naval Training Station, San Francisco, and additional duty Naval Training Station.

Asst.-Surgeon P. T. Dessez, detached *Severn*, to home and wait orders.

Asst.-Surgeon J. O. Downey, to Naval Hospital, Philadelphia.

Passed Asst.-Surgeon C. N. Fiske, detached *Marblehead*, when out of commission; to *Yorktown*.

Passed Asst.-Surgeon, G. M. Mayers, detached Navy Yard, Washington, D. C., etc.; to *Marietta*.

Acting Asst.-Surgeon E. P. Huff, appointed as acting assistant surgeon in the navy from Aug. 31, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Sept. 5, 1906:

Sawtelle, H. W., surgeon, directed to report to chairman of board of medical officers, Washington, D. C., September 4, for physical examination.

Stoner, G. W., surgeon, directed to proceed to Washington, D. C., for special temporary duty, on completion of which to rejoin station.

Mead, F. W., surgeon, directed on expiration of leave of absence, to proceed to Savannah, Ga., and assume command of service at that port.

Carrington, P. M., surgeon, granted three days' leave of absence from Sept. 3, 1906, under provisions of Paragraph 189 of the Service Regulations.

Williams, L. L., surgeon, leave of absence granted for one month and fifteen days, from July 16, 1906, amended to read nineteen days from July 16, 1906, and five days from Aug. 19, 1906, in all twenty-four days.

Guiteras, G. M., surgeon, directed to rejoin station at Cairo, Ill.

Hough, J. Spencer, acting asst.-surgeon, granted leave of absence for thirty days, to be taken on or about Oct. 15, 1906.

Thomas, A. M., pharmacist, granted leave of absence for fifteen days from Sept. 9, 1906.

BOARDS CONVENED.

Board of officers was convened to meet at the Bureau, Washington, D. C., Sept. 4, 1906, to determine whether or not the physical condition of Surgeon H. W. Sawtelle is such as to entitle him to "waiting orders." Detail for the board: Asst.-Surgeon General J. M. Eager, chairman; Asst.-Surgeon General J. W. Kerr, Surgeon L. L. Williams, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended Sept. 7, 1906:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, Aug. 18-25, 7 cases.
New York: New York, Aug. 18-25, 3 cases.
Ohio: Cincinnati, Aug. 24-31, 1 case.
Pennsylvania: Sunbury, July 4, 1 case.
Texas: Houston, Aug. 18-25, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, July 14-28, 30 cases.
Canada: Toronto, Aug. 18-25, 1 case.
France: Paris, Aug. 4-11, 7 cases.
Great Britain: Liverpool, Aug. 18-25, 2 cases.
India: Bombay, July 24-Aug. 7, 3 deaths; Calcutta, July 14-28, 21 cases; Karachi, July 24-Aug. 5, 7 cases, 2 deaths; Madras, July 21-Aug. 3, 5 deaths; Rangoon, July 14-21, 2 deaths.
Japan: Kobe, July 14-21, 1 case.
Russia: Moscow, Aug. 4-11, 2 cases, 2 deaths; Odessa, Aug. 4-18, 8 cases; St. Petersburg, July 28-Aug. 4, 1 case, 1 death.
Siberia: Vladivostok, July 14-21, 2 cases, 1 death.

YELLOW FEVER.

Cuba: Havana, Sept. 3-8, 1 case, 1 death.
Mexico: Merida, Aug. 12-25, 10 cases, 5 deaths; Vera Cruz, Aug. 19-25, 1 case.

CHOLERA.

India: Bombay, July 24-Aug. 7, 207 deaths; Calcutta, July 14-28, 19 deaths; Madras, July 21-27, 10 deaths.

PLAGUE—INSULAR.

Honolulu: Hawaii, Aug. 30, 1 death.

PLAGUE—FOREIGN.

Arabia: Djeddah, July 16-22, 11 cases, 11 deaths.
Egypt: Alexandria, Aug. 4-9, 8 cases, 7 deaths; Suez, Aug. 3-9, 4 cases, 4 deaths.
India: General, July 7-14, 450 cases, 346 deaths; Bombay, July 24-Aug. 7, 69 deaths; Calcutta, July 14-28, 17 deaths; Karachi, July 22-Aug. 5, 16 cases, 16 deaths; Rangoon, July 14-28, 277 deaths.
Japan: Formosa, July 21-31, 20 cases, 29 deaths.

Society Proceedings

COMING MEETINGS.

American Electro-Therapeutic Association, Philadelphia, Sept. 18-20.
Am. Assn. of Obstetricians and Gynecol., Cincinnati, O., Sept. 20-22.
Medical Association of District of Columbia, Washington, Oct. 2
Idaho State Medical Society, Lewiston, Oct. 4-5.
Colorado State Medical Society, Denver, Oct. 9-11.
Delaware State Medical Society, Wilmington, Oct. 9.
Medical Society of Virginia, Charlottesville, Oct. 9-11.
Kentucky State Medical Association, Owensboro, Oct. 10-12.
Vermont State Medical Society, Barre, Oct. 11-12.
American Association of Railway Surgeons, Chicago, Oct. 17-19.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, held at Salt Lake City, Utah, Aug. 30-Sept. 1, 1906.

The President, Dr. M. L. Harris, Chicago, in the Chair.

(*Continued from page 788.*)

Gastrointestinal Ulcer.

Dr. H. D. Niles, Salt Lake City, stated that ulcer is not only a producer of symptoms, as a primary lesion, but may be the antecedent of many grave complications and sequelæ; it might indirectly cause a great variety of puzzling symptoms, which the surgeon must try to interpret correctly. So long as physicians think of gastrointestinal ulcer simply as a theoretical possibility, of rare occurrence, and of obscure pathology, the symptomatic treatment will prevail, and unsatisfactory results will follow. As soon as physicians learn to appreciate that ulcer is not only a real pathologic entity, but that it is the most common of all gastrointestinal lesions, they will find them selves very near the true explanation of many obscure chronic abdominal symptoms, and will be prepared to formulate a timely and rational treatment for the pathology that produces these symptoms.

DISCUSSION.

Dr. Andrew C. Smith, Portland, Ore., said that gastrointestinal ulcer is a common pathological entity that should be considered in all conditions of chronicity of abdominal symptoms.

Dr. W. W. Grant, Denver, said that gastroenterostomy for ulceration of the stomach and intestine, particularly the duodenum, and for obstructive lesions of these parts, is now one of the most common and conservative of modern operations. Like most new surgical triumphs, it is likely to be abused somewhat before it reaches its proper status as a surgical procedure. Surgeons should be a little more conservative in the surgical treatment of these conditions, and not until there are manifest evidences of ulcer, such as persistent ulceration or obstruction is it desirable to perform this operation. A large number of these cases are attended with profuse acute hemorrhage. They are the chronic digestive cases, in many of which the hemorrhage is not manifested; but the investigations of Rosenthal and Frederick show that in these cases there is occult hemorrhage. This is shown chiefly by microscopic examination of the contents of the stomach and of the fecal discharges. When this condition exists and persists, operation is demanded. Operation, however, should not be undertaken until medical treatment and other non-surgical measures have been given reasonable trial.

Dr. B. B. Davis, Omaha, said that in a number of instances of ulcer of the stomach, duodenum, and in the region of the pylorus, he has been able to get a definite idea as to the location of the ulcer by distending the stomach, whereas before this he was absolutely at sea. Whenever there is suspicion of ulcer, either of the stomach, the duodenum, or intestinal tract lower down, the physician should resort to systematic daily examinations of the stools for blood. In a number of instances he has been able to arrive at a definite idea in this way, whereas, if he had resorted to gross inspection simply, he never would have suspected what existed.

Dr. John C. Morfit, St. Louis, said there was nothing that he admired more than radical conservatism. He liked to see a man who could use his head without using his knife, but who never used his knife without using his head. The greatest point of gastrointestinal ulcer is not the operation; it is the diagnosis. Gastroenterostomy has been so perfected that it is now a comparatively simple procedure, and for that reason men with surgical tendencies might operate sometimes because they could, and not because they ought to. He would hesitate to operate on a case of gastric ulcer until the patient was seen by a good internist and a good neurologist, on account of the elements of hysteria and neurasthenia being connected with the case.

Dr. E. F. Root, Salt Lake City, said it ought to be made plain to the general practitioner that ulceration of the bowel is very much more frequent than was previously supposed. General practitioners, men who were not doing very much surgery, are liable to have a very vague idea of what is going on within the abdomen. If gastrointestinal ulcer is diagnosed, it should be dealt with surgically as soon as possible.

Dr. R. C. Coffey, Portland, said that these ulcers are the seat of cancer in a very large proportion of cases. He has also learned that ulcer and cancer occur in the same location, usually, where the gastrointestinal contents are detained for some reason or other. A frequent seat for cancer is the cecum. Fecal matter is detained here for a while, then it is passed over until it reaches the sigmoid. Very rarely is cancer found at the splenic flexure, at the hepatic flexure, or in the transverse colon. The next frequent point for ulcer an cancer is the sigmoid; next the rectum.

Surgical Treatment of Splanchnoptosis.

Dr. B. B. Davis, Omaha, presented a brief statement of the anatomic changes found, and described the various surgical procedures which have been proposed and carried out for the relief of this condition. He gave a résumé of his own operations.

Late Phlebitis Following Clean Abdominal Operations.

Dr. W. W. Grant, Denver, presented that form of phlebiti culminating in the veins of the legs and which is known t occur most frequently about two weeks after simple, asepti abdominal operations, without being preceded by faster pulse elevation of temperature, pain or any indication at presen known of its advent. In the great majority of cases it culminates in the vessels of the left leg, no matter where the incision is made. He quoted at length from the literature, and showed that the etiology of this condition is still very hazy His belief is that the cause of phlebitis of the epigastric, iliac femoral, saphenous and tibial vessels, occurring late after a perfectly aseptic operation, and clean, prompt healing of the wound, is probably not septic. The specific cause is unknown In the absence of convincing or pathological evidence, and in the face of profound surgical skepticism, it is not rational in the best and cleanest days known to surgery to assume infection that was devoid of satisfactory evidence. It is exceedingly difficult, in fact quite impossible, to reconcile the facts with the recumbent position, the simple ligature, or injury to small veins, in a distant field on the opposite side of the body, although admitting that infection might not come from the site of operation. The author believes there is a general condition affecting the composition of the blood that might be caused before operation, which is an essential factor in the cause of *thrombo-phlebitis in these cases.* A careful scrutiny of patients should be made before operation and an examination of the blood made before and after operation. If the patient is chlorotic and anemic, or the conditions not satisfactory, the health should be improved, if delay is permissible, by the administration of iron and acids, and metabolism should be improved by a suitable food supply, while specific or constitutional affections should receive just consideration.

DISCUSSION.

Dr. A. C. Stokes, Omaha, said that there was referred to him an anemic, pale woman, 56 years of age, in whom beginning carcinoma of the rectum was suspected. She was given an anesthetic for the purpose of examination. A speculum was introduced well up into the rectum without producing any great amount of traumatism to the mucous membrane. After this the patient was returned to bed and kept there on account of her anemic condition. Four days later she developed phlebitis. He was unable to say whether the phlebitis was due to the traumatism of the rectum or to the anesthetic. He thought it was the anesthesia which produced a general toxemia in some cases, and this might produce in turn a chemical change in the blood, which at times might produce, in connection with rest in bed, venous stasis, etc. He is inclined to believe that the great majority of these cases are septic, and whenever he sees a case of phlebitis he always searches for a focus of infection.

Dr. Harry M. Sherman, San Francisco, cited one case of phlebitis of the left femoral vein and mentioned two others occurring in the practice of other surgeons, all three operations having been done by different men and each operation being different.

Dr. Leonard Freeman, Denver, pointed out that femoral phlebitis occurs in connection with appendicitis even when no operation is done. He has seen a double femoral phlebitis result in a case of appendicitis within a few days, with the patient not lying in bed. Phlebitis occurs in connection with other things where there is no question about septic infection. For instance, in an ordinary Pott's fracture of the right leg, and in one case of simple fracture, left femoral phlebitis resulted in the course of a week or two. In another case of fracture of the left patella a right femoral phlebitis developed and a left phlebitis afterward. These could not be explained by infection.

Dr. E. S. Wright, Salt Lake City, recalled his first case of phlebitis following an operation for appendicitis. The appendix had ruptured and had filled the pelvis with pus. He drained through the cul-de-sac and the vagina became partially obliterated. Possibly the traumatism incident to the first introduction of the speculum in this case contributed to the result. The patient recovered from the phlebitis without any particular treatment.

Dr. J. Clark Stewart, Minneapolis, said the general impression among pathologists is that thrombosis is in many instances of bacterial origin. The term sepsis is a *bête noir* for the surgeon, and naturally surgeons refuse to accept sepsis as a cause of anything in connection with what they are doing. If the term bacteriemia is used they would be, perhaps, more willing to accept it. It would seem that many cases, if not all, of thrombosis are due to bacteriemia. Pus bacteria enter the blood from unknown sources and give rise to such diseases as osteomyelitis. There is only one way to do, and that is to have blood cultures made of the cases that have femoral thrombosis and see whether or not they have bacteria in the blood. The presence of bacteria in the blood does not necessarily mean sepsis in a surgical sense, as a patient might have a certain number of bacteria circulating in the blood without clinical manifestations. It is only when some point of least resistance occurs that the lesions are localized.

DISCUSSION.

Dr. Andrew C. Smith, Portland, Ore., recalled three cases of phlebitis from three different types of operations in his own work. None of them was immediately septic, but each of them was remotely septic. He attributed each case to the catgut, and thought the slight sepsis present was due to late disintegration of the chromic catgut and the absorption of toxins from that.

Dr. Union Worthington, Salt Lake City, did not believe that trauma is a cause of phlebitis. Whenever he has a case of phlebitis it is his practice to look for infection. The fact that phlebitis more frequently occurs in the left leg than in the right has never been satisfactorily explained to him.

Dr. Grant expressed the belief that blood examinations by bacteriologists and pathologists would have to settle the question. Pathologists have not been given a good chance thus far because most of the patients recover; but the rather dogmatic statement of Murphy that recumbency is the cause is not a tenable one.

(*To be continued.*)

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

(*Continued from page 800.*)

SECTION ON STATE MEDICINE.

This section, which met in the new science building and was presided over by Dr. Frederick Montizambert, Ottawa, Ontario, had a most attractive program, divided by days into symposia on "Tuberculosis," "Control of Water and Milk Supplies," "Hygiene of the Home and Public Institutions" and "International Sanitary Protection."

Problems of Water Supply.

Dr. Hibbert W. Hill, assistant director of the health laboratories, Minneapolis, prepared a paper on "Water Supplies from a Sanitary Standpoint," which was read in his absence by Dr. F. F. Wesbrook. He advised the continuous supervision of the water supply in order to forestall outbreaks of typhoid fever. He expressed the advice that in municipalities where large quantities of water were used filtration was the only practicable method of artificial purification. The English filter bed may be compared to a water-tight reservoir, suitably underdrained and filled to the depth of five or six feet with proper filtering material. The water flows evenly and slowly over the surface of the sand, leaving most of its suspended material on the top. The rate of filtration by this method of slow filtration averages from about two to two and a half million gallons per acre per day, and, of course, a large filter costs less in proportion than a small one. A filter one acre in extent would cost about $60,000. The essayist urged the repeated examination and treatment of water supplies which have been allowed to become polluted. In speaking of the purification of water he discussed the methods of filtration, distillation and aeration, giving special attention, as above stated, to the "slow sand" or English filter bed. In mechanical filtration a small quantity of some coagulant, preferably aluminium sulphate, is added to the sand before it reaches the water. The aluminium hydrate thus formed becomes a most important constituent of the filter; for without it its bacteriologic efficiency is very low. Water is then added to the filter, which is a tank or cylinder, three parts full, of a specially selected sand with a suitable underdrawing for carrying the filtered water to the reservoir. The sand becomes dirty in a short time, depending on the turbidity of the water, and must be washed by a reversed current at least once every day.

Water Purification.

Dr. Henry D. Holton, Burlington, Vt., secretary of the state board of health, in his paper on "Water Supplies" declared that the custom of discharging sewage into rivers and other bodies of water can not be too strongly condemned. This practice is a long-standing menace to all water supplies and will sooner or later be the cause of disaster to the health of the community using the water supply. He advocated the careful analysis of all sources of public water supply, and considered the filtration of water a necessary precaution and the filtration of sewage, by which a comparatively harmful effluent might be discharged, also necessary. He called attention to editorials on sewage disposal which he had seen since his arrival in Toronto, which could have been written only in ignorance of the dangers arising from the contamination of the water supply by sewage. He attributed a great proportion of the intestinal and kidney troubles from which the people suffer to a pollution of the water supply. Many interstate and international bodies of water have become affected by the prevalent custom which tends to pollution. The question of reservoirs itself is one that demands governmental attention. Filtration removes the odor and dangerous bacteria, but the tendency among the municipalities to overlook the importance of this feature of water supply is all too apparent.

Purification of Water Supply.

Dr. William J. Robinson, medical health officer of Guelph, Ontario, considered the artificial purification of water for human consumption. He discussed the effect of the sand filter, the rates of filtration and the questions of chemical and mechanical filtrates, and finally referred to the experience of several American cities in which the lowering of the death rate from typhoid fever had followed the adoption of filtering plants.

Prof. John Glaister, Glasgow, said that a water supply, pure and abundant, is the best line of defense against the epidemics which formerly swept communities. As a result of such care, he stated that there is now no such thing in Scotland as an epidemic due to impure water. Large reservoir accommodations and adequate sedimentation areas are needed for filtration, but the color can not be removed by filtration. In his experience there are three ways of securing a good, pure supply of water: First, the purchase outright of the gathering ground or watershed of the district of supply, or of the lake itself, as in the case of Manchester; second, as in the case of Glasgow, the purchase of the rights of conservation of the watershed with the object of preventing pollution, and, third, *an arrangement* whereby a municipality secures the right of inspection of its water supply.

Pollution of Canadian Streams.

T. A. **Starkey**, professor of hygiene in McGill University, Montreal, discussed the question of pollution of water supplies by sewage and gave a summary of his observations for a series of years of the gradual deterioration of the water in the Ottawa and St. Lawrence rivers. He expressed disbelief in the popular idea that large rivers completely purify themselves of pollution by sewage. From a bacteriologic point of view the so-called purification is merely dilution and the pollution is not disposed of. In the St. Lawrence River there has been a gradual increase from an average of 90 colonies of bacteria in 1903 to 168 in 1906. These figures are striking, showing that, whether from sewage or surface drainage, the waters of the river were becoming more polluted every year. The progress of pollution of the Ottawa River is more rapid, the average of increase in the colonies of bacteria having risen in the same period of time from 110 to 300 colonies, and on some special occasions in that part of the river from which Westmount obtains its water supply he found from 1,000 to 1,500 colonies of bacteria, and the average for the entire year was 600. However, a chemist would have been forced to pass this water as first class. Under modern conditions it is practically impossible to obtain a supply of pure water without filtration. He believes that the condition of Canadian waters is becoming dangerous and that the conditions which prevail in Winnipeg would in a very short time exist in the eastern cities unless radical measures are adopted.

Water Situation in Ontario.

Dr. Peter Henderson Bryce, Ottawa, formerly secretary of the board of health and now dominion officer of health, said that the question to be decided in Ontario was whether a fight was to be made against the pollution of streams or whether filtration was to be depended on. He is opposed to the pollution of streams. He described the methods adopted by the provincial boards of health for the disposal of sewage in Muskoka, by reason of which, with an average summer population of 20,000, there had not been as much typhoid fever in the last five years as there would ordinarily be found in a common rural community. He was gratified to be able to announce that in at least 125 towns in Ontario the water supply is now reasonably free from suspicion.

Control of Milk Supply.

Prof. R. Harcourt, Guelph, Ontario, contended that the milk is very rarely kept and handled under proper conditions and that the methods applied to the handling and bottling of milk are in almost every instance faulty. Milk should be used more extensively as a food and not regarded as a luxury. While a most valuable food, milk is especially susceptible to contamination, which it is almost impossible to prevent. Even the use of the milking machine, an improvement on the old method, has not been entirely successful in the elimination of contamination. If a commission were appointed to investigate the conditions under which the milk supply is handled and delivered to the consumer, the report would, he believed, be worse than that recently made regarding the packing establishments of the United States. The consumer has a right to demand milk which, if kept at a temperature of 60 degrees or less, will remain sweet for twenty-four hours. The advisability of the establishment of such a standard for milk, the price of which should depend on the quality of the article furnished, was considered. The addition of preservatives of any kind was deplored as injurious to the public health, and as, under some circumstances, deleterious to the food quality of the milk.

Prof. John Glaister, Glasgow, in his paper on "Administration and Control of Milk Supplies," detailed the methods whereby the purity of milk could be assured to the consumer and gave the result of the efforts to that end in Glasgow.

Prof. R. Tanner Hewlett, London, stated that one of the greatest difficulties in this matter is that public opinion has not been sufficiently aroused and that it is difficult to have legislation preceding public opinion. He emphasized the necessity of compulsory inspection of cattle, the eradication of bovine tuberculosis by approved scientific methods. He also spoke of the regulation to be applied in connection with the housing of cattle and the advisability of the adoption of more satisfactory mechanism for the enforcement of sanitary laws. The questions of temperature and the care of milk were declared to be very important, and the speaker believed that many of the containers now used are veritable microbe traps. He favored the use of sealed bottles for the distribution of milk, and further suggested as a preventive measure the immediate chilling of the milk.

A resolution was thereon adopted by the section that the section strongly recommend to the local government boards of Great Britain, Ireland and to the provincial board of health of Canada that the time has come when the existing provision of the law with regard to the housing of dairy cattle, milk storage and milk distribution and the periodic inspection of such cattle and dairies should be more strictly enforced.

(To be continued.)

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

Eleventh Annual Meeting, held at St. Clair, Mich., Aug. 30-Sept. 1, 1906.

The President, **Dr. Casey A. Wood**, Chicago, in the Chair.

The academy was called to order by the president, and an address of welcome on behalf of the state of Michigan was made by Congressman Edwin Denby, to which a suitable response was made by Dr. Charles B. Stockwell, Port Huron, Mich, president of the Michigan State Medical Society.

Addresses.

Dr. Casey A. Wood, Chicago, president, and **Dr. Joseph A. Stucky**, Lexington, Ky., vice-president, delivered a joint address on the "Relationship of the Eye to the Orbit and the Neighboring Cavities."

The oration on oto-laryngology was delivered by Dr. Dundas Grant, London, Eng., on "Some Practical Problems in Otology and Rhinology."

The oration on ophthalmology was delivered by Mr. R. Marcus Gunn, F.R.C.S., London, Eng., on "Optic Nerve Ailments."

Both these orations were illustrated by the stereopticon.

Election of Officers.

The following officers were elected: President, Dr. Joseph A. Stucky, Lexington, Ky.; vice-presidents, Drs. Richard A. Reeves, Toronto, and Eugene Smith, Detroit; secretary, Dr. George F. Suker, Chicago (re-elected); treasurer, Dr. Otto J. Stein, Chicago (re-elected), and members of the council, Drs. Joseph A. Stucky, Lexington, Ky., Hanau W. Loeb and Adolph Alt, St. Louis; Alvin A. Hubbell, Buffalo, N. Y., and William L. Ballenger, Chicago.

The academy will probably hold its 1907 session in Louisville, Ky., but the exact time and place will be fixed by the council about six months before the time for the meeting.

(To be continued.)

AMERICAN ORTHOPEDIC ASSOCIATION.

Twentieth Annual Meeting, held in Toronto, Canada, Aug. 20-22, 1906.

(Concluded from page 801.)

Congenital Dislocation of the Hip.

Dr. George B. Packard, Denver, reported cases and made remarks on the treatment by manipulative reduction. The most favorable time for reduction is shortly after the patient begins to walk. The hamstrings should be left unstretched, so that if redislocation occurs after application of the plaster this may be indicated by sudden relaxation of the hamstrings. In unstable cases especially the plaster should be applied very snugly.

Coxa Valga.

Dr. James K. Young, Philadelphia, reported several cases in which, as shown by skiagraphs, the angle between neck and shaft of femur seems to be wider than normal, i. e., more than 135°. Adduction of the thigh is limited.

DISCUSSION.

Dr. John Ridlon, Chicago, in discussion of the two foregoing papers, said that in congenital anterior dislocation of the hip reduction should be effected by inward rotation after flexion, Anterior dislocation is shown by feeling the head in the groin on extreme outward rotation. The angle between the neck and the shaft of the femur in a skiagraph can be increased by rotating the leg, and this probably accounts for the apparent cases of coxa valga reported.

Dr. Albert H. Freiberg, Cincinnati, said that great caution was necessary in estimating the angle of the neck from a skiagraph.

Dr. Young said that he believed that at least three of the cases presented by him were coxa valga.

Plaster-of-Paris.

Dr. Walter G. Stern, Cleveland, said that the greatest strength is obtained from slow-setting dental plaster that requires from 6 to 7 minutes to set. All agents that hasten the time of setting weaken the result. From 10 to 20 per cent. Portland cement in the plaster strengthens the result without lengthening the time of setting. The mixed plaster and cement can be softened by immersion in water for half an hour so that it can be cut by a sharp knife.

Intermittent Limping.

Dr. Robert W. Lovett, Boston, said that early symptoms simulate those of simple static foot trouble. The trouble is primarily circulatory and the only effective treatment of it is rest. He recorded three cases, one of which came to amputation.

DISCUSSION.

Dr. Albert H. Freiberg, Cincinnati, said that cases of foot trouble which are not relieved by rest are probably only secondarily static and should suggest arteriosclerosis.

Dr. Joel E. Goldthwait said that the regularity of onset of symptoms, as always after walking two blocks, suggested arterial trouble. Great and sudden pain is also suggestive.

Dr. Lovett said that in every case of foot trouble that he saw he palpated the dorsalis pedis and the posterior tibial arteries in order to rule out circulatory trouble.

Dr. Compton Riely, Baltimore, read a paper entitled "Report of a Case of Chronic Dislocation of the Lower Jaw, Presenting a Simple Device for Maintaining Reduction."

Old Fractures of the Tarsus.

Dr. Leonard W. Ely, New York, reported seventeen cases. He said that in cases of chronic foot trouble an old fracture is often unrecognized. Treatment of old cases should be symptomatic, as by supportive adhesive strapping; but treatment is unsatisfactory. Recent cases of foot trauma should be skiagraphed to discover fracture if present. Recent fractures of the tarsus should be immobilized; displaced fragments should be dealt with surgically.

DISCUSSION.

Dr. Charles F. Painter, Boston, said that prolonged immobilization of old cases in plaster-of-Paris is the only effective treatment. Operative treatment in old cases is usually to be avoided.

Dr. Frank E. Peckham, Providence, R. I., reported an old case in which removal of a fracture spicule entirely relieved the symptoms.

Supports for the Arch.

Dr. Phil. Hoffman, St. Louis, read a paper entitled "A Method for Measuring for Shaping and Placing Cork, Felt, Leather or Similar Arch Supports." A paper model is cut out to cover area of sole enclosed between marks at posterior margin of ball of great toe, anterior margin of weight-bearing surface of heel and ¾ inches from outer margin of sole. The astragaloscaphoid juncture is marked on the paper as the highest point of the support, and the support made from this model is set in the shoe so that the highest point is as far from the back of the shoe as the astragaloscaphoid juncture is from the back of the heel.

Dr. Ansel G. Cook, Hartford, Conn., read a paper entitled "A New Form of Shoemaker's Last." The foot is placed on a steel plate shaped like the sole of a shoe, and foot and plate swathed in plaster-of-Paris. This is cut off and filled with plaster. The shoe is made directly on the resultant cast, without hammering. The cast can be changed by the surgeon to any shape desired.

Suture Necrosis in Tendon Suture and Tendon Transplantation.

Dr. David Silon, Pittsburg, reported having made an experimental study of the influence of such necroses. The research leads to the conclusions that the strength in the union of grafted tendons depends on the callus; that failure to hold from necrosis must be very rare; that failure to hold on account of insufficient suturing is probably common. Tendons should be raised from their sheaths as little as possible, and sheaths should be restored by suturing the divided edges.

Torticollis.

Dr. Reginald Sayre, New York, said that many cases of torticollis, formerly supposed to be due to "cold" or "rheumatism" in the soft parts, are probably dependent on arthritis of the cervical spine, or to slight fracture. He reported cases.

Drs Robert W. Lovett, Boston, and S. C. Baldwin, Salt Lake City reported cases.

Hemophilic Joints.

Dr. Arthur J. Gillette, St. Paul, reported that subcutaneous injection of 5 per cent. gelatin solution in one case several times stopped dangerous hemorrhage into joints. Great destruction of joint may be caused, thus simulating joint tuberculosis. Rise in temperature precedes hemorrhage into joints. Immobilization and ice application relieves the severe joint pain. Gelatin by mouth is sometimes prophylactic.

DISCUSSION.

Dr. Edwin W. Ryerson, Chicago, reported a hemophilic joint that had been mistaken for a gonorrheal joint.

Dr. Joel E. Goldthwait, Boston, said that in one case 5 grains salicylate of sodium, twice in day, always greatly relieved the pain of an attack.

Dr. Gillette said that he believed that so-called purpuric rheumatism was really hemophilic joint.

Wednesday morning, August 22, the Association visited the Toronto Orthopedic Hospital, where a clinic was conducted by Dr. MacKenzie, and a luncheon given by the ladies' board of the hospital. Apparatus was exhibited and cases reported by Drs. David Silon, Pittsburg; Herbert P. H. Galloway, Winnipeg, Canada; Ansel G. Cook, Hartford, Conn.; Compton Riely, Baltimore; Wm. E. Blodgett, Detroit; Bart E. MacKenzie, Toronto; Walter G. Stern, Cleveland; Edwin W. Ryerson, Chicago, and J. T. Watkins, San Francisco.

AMERICAN ROENTGEN RAY SOCIETY.

Seventh Annual Meeting, held at Niagara Falls, N. Y., Aug. 29-31, 1906.

(Concluded from page 798.)

(Concluded from page 798.)

Teaching Roentgenology in Medical Colleges.

Dr. Vernon J. Willey, Ann Arbor, Mich., urged that medical colleges should give some attention to the teaching of Roentgenology, because of its value in diagnosis and therapeutics. Instruction should be given in the principles rather than in the technic, which must be acquired by actual experience. An intelligent grasp of the principles of Roentgenology involves a knowledge of radiophysics, a general knowledge of the apparatus employed, of radiography and fluoroscopy, with especial reference to the interpretation of screen and negative;

of radiotherapy, with especial reference to pathologic conditions which yield to irradiation. Students should be taught the effects of the rays on various tissues, and the limitation of the ray in therapeutics. A course of twelve or twenty hours is sufficient.

Method of Estimating X-Ray Dosage.

Dr. **Henry G. Piffard**, New York City, takes a brass ball about one and one-quarter inches in diameter and supports it about four inches from the wall of the tube just within the circle of rays issuing from the anterior hemisphere. The ball is then connected by a cord about eight feet long to the charging device of the electroscope. As soon as the current passes through the tube the aluminum needle or foil indicates the charge and the angle is easily read off on the scale. For this purpose he found Braun's electroscope, which is graduated in volts, or his own, which is graduated in degrees of an arc, very convenient. The angle varies directly with the current passing through the tube, and also shows whether the tube is running steadily or not, and indicates any notable change in the vacuum.

Roentgen Ray Filter.

Drs. **G. E. Pfahler** and **J. F. Schamberg**, Philadelphia, conducted a series of experiments on rabbits in which use was made of silver, leather and aluminum, for the purpose of establishing their value as filters. They found the leather of decided value for filtering out the soft, medium and hard rays. They also found that the susceptibility to the rays varied in animals, which doubtless is also true of man.

New Direct Reading of X-Ray Meter.

Dr. **George C. Johnston**, Pittsburg, takes advantage of the fluorescence produced on a tungstate of calcium or other screen as indicating the quantity of the *x*-rays emitted. The fluorescing screen is placed in a light, tight box, and facing it is a selenium cell, which has the property of changing its ohmic resistance to the passage of the electric currents with relation to the presence or absence of light waves. Such a cell, when kept in total darkness, may have the resistance of several hundred ohms, yet on permitting light, natural or artificial, to strike on the cell, its ohmic resistance falls almost instantly to a great degree, and this alteration bears a direct relation to the intensity of the light. If there is placed in series with such a cell a galvanometer or ammeter of sufficient delicacy, a series of current such as an ordinary dry battery and a variable rheostat providing a means of introducing more or less ohmic resistance into the circuit, and the rheostat, the measuring instrument, and the selenium cell be balanced, the point will be found at which the ohmic resistance of the rheostat, the communicating wires, the selenium cell, and the measuring instrument will exactly balance the electromotive force of the battery.

If, however, the container having within it the screen and cell be placed in the path of the *x*-rays, the screen will become luminous in proportion to the distance from the source of the rays and the quality of rays striking it. The container will be illuminated, the selenium cell under the influence of this light will change its ohmic resistance in proportion to the light, and the current flow will be measured and indicated on the dial of the galvanometer or other instrument employed for the purpose of making these electric measurements.

President's Address.

Dr. **Henry Hulst**, Grand Rapids, Mich., presented further observations on the "Roentgenology of the Stomach and Intestines," and illustrated his paper with a large number of instructive radiographs.

Treatment of Lupus Vulgaris.

Dr. **H. W. Van Allen**, Springfield, Mass., reported 15 cases, with 80 per cent. cures. The average time since treatment was discontinued is from one year to eight months. The average time of treatment is six months, the shortest period being three months and the longest nine months. The most recent case was treated three months ago. The longest time that has elapsed since treatment is three years. Eleven cases were cured; in one there was an apparent cure; one is returning, and two cases were not benefited.

Tubercular Adenitis.

Dr. **Russell H. Boggs**, Pittsburg, said that the results obtained by the Roentgen ray in the treatment of tubercular adenitis compare favorably with those obtained by any other method. A large proportion of the cases can be apparently if not permanently cured. Several cases have remained cured for over four years. Improvement is not obtained, as a rule, until at least twelve treatments have been given. There are exceptions, however, one patient being improved after four treatments, and others not improving until after twenty-five or more treatments. A permanent cure should not be expected until after at least three months' treatment. He advised that in treating these cases the apices of the lungs should also be rayed. To be beneficial treatment must be energetic.

Ultimate Results in Carcinoma of Breast.

Dr. **George C. Johnston**, Pittsburg, advised treatment of all cases of carcinoma of the breast, both before and after operation. The application of the *x*-ray combined with skillful surgery offers the only hope of cure. Postoperative treatment should be begun not later than the tenth day. The mediastinum and axilla should also be rayed. Primary carcinoma should be treated by the ray alone only when the age and condition of the patient argue against operation. Mediastinal involvement is not a sign of fatality. No case should be treated with the *x*-ray that can not be treated surgically. Filters should always be used.

Measurement of Diameter of Pelvis.

Dr. **George E. Pfahler**, Philadelphia, described his method of measuring the diameter of the pelvis by means of the Roentgen ray. The technic is based on four principles: 1. The plate must be brought parallel to the brim of the true pelvis. 2. Measure the distance of the brim of the pelvis from the anode of the tube. 3. Distance of anode of tube from plate. 4. To place the anode in the axis of the brim of the true pelvis. To assist in attaining successful results he makes use of a very simple apparatus, which was exhibited.

Roentgen Ray in Dermatology.

Dr. **Andrew P. Biddle**, Detroit, said that experience has shown the value of the Roentgen ray in the treatment of skin affections when it is used conservatively and with due regard to recognized dangers. The ray is useful in selected cases, but not as a routine treatment. It should be used in addition to other remedies, especially in those cases which have resisted ordinary treatment and where there is a marked infiltration of tissue. Stubborn cases of acne, otherwise incurable, yield readily to the ray and relapses are less frequent. The *x*-ray is contraindicated in all acute cases and in the acute exacerbations of all chronic cases.

Treatment of Epithelioma.

Dr. **Kennon Dunham**, Cincinnati, said that in epithelioma of the face, except when the tumor is situated on the lip, the *x*-ray gives the best results in every way. That the *x*-rays have scattered the growth throughout the body, doing more harm than good, is true, but that is due to the fact that physicians generally use any tube in place of securing the most suitable tube. In cases of tumor of the lip a radical operation should be done, with careful dissection of all lymphatics draining the part. Radiation before and after operation (for at least two months) is essential. After operation exposures can be made every second or third day, using a leather filter. In cases of recurrent rodent ulcer and large epitheliomata of the body or extremities which have penetrated deeply he uses the galvanic current, with local or general anesthesia, completely surrounding the tumor with galvanized needles, connecting these with the positive pole of the battery, using 30 to 110 volts. This closes the lymphatics and blood vessels surrounding the tumor, lessening the danger of metastasis and a large part of the tumor sloughs out. His results have been excellent.

Diagnosis of Renal Calculi.

Dr. **F. H. Baetjer**, Baltimore, said that with a good apparatus and technic calculi, when present, can practically always be found. The position of the calculus should be determined positively, so that the surgeon, when operating, can not overlook the stone. The use of the x-ray for this purpose is free from danger and of great benefit to the patient. Negative findings should not be relied on.

Diaphragm in Roentgenography of Chest.

Dr. P. M. Hickey, Detroit, said that a small negative made with the diaphragm shows more detail of structure than a large general plate. Early changes in the lung are easily shown with a diaphragm plate, and it is more accurate in detecting small areas of involvement than is the stethoscope. Diagnoses can also be made earlier.

Roentgen Ray in Blood Diseases.

Dr. Henry K. Pancoast, Philadelphia, reported the final results in cases referred to in previous papers, and added three new cases. He said that in leukemia the x-ray is not a curative agent, but by secondarily destroying excessive and abnormal kinds of lymph tissue, and by greatly increasing the numbers of leucocytes in the blood, the individual organism is given a chance to remove the cause of the disease. In certain constitutional disorders the x-ray is not only dangerous, but may contribute to a fatal issue. One of the cases which last year he reported symptomatically cured had two relapses since, and the patient died. Another case reported as symptomatically cured has relapsed.

Changes in Kidneys Produced by Roentgen Ray.

Dr. A. S. Warthin, Ann Arbor, Mich., examined the kidneys of three cases in leukemia treated by the Roentgen ray. He found extensive necrosis and calcification, the changes in general resembling those produced by certain posions. He believes that long exposures damage the renal cells primarily to but a slight degree, but that after long irradiation there is a second injury to the kidney epithelium, due most probably to an intoxication. The destruction of the lymphoid tissue is the most probable source of the poison, the symptoms of the intoxication in general resembling those due to products of proteid distintegration.

Localization of Foreign Bodies in Eye.

Dr. Charles F. Bowen, Columbus, Ohio, has devised an apparatus for locating accurately foreign bodies in the eye. It is a modification of Sweet's apparatus, and can be used in conjunction with the compression cylinder diaphragm. It is so arranged that the patient's head is held absolutely quiet during the exposure. The plates are changed by means of a plate-holder without disturbing the head.

Carcinoma of Bladder.

Dr. Alfred L. Gray, Richmond, Va., reported a case of squamous cell carcinoma of the bladder in which the tumor was removed surgically, the pedicle being treated with the x-ray. Treatment was administered every other day, and after twenty-one treatments the stump of the tumor had disappeared entirely, leaving a soft linear scar.

Fee Table.

The committee appointed to prepare a fee table reported as follows: For work done in the laboratory: Sinus examinations, $25 to $50; location of foreign bodies in the eye, $25 to $50; examination of teeth, $10 to $75; diagnosis of renal and vesical calculi and gallstones, $50 to $200; examination of stomach and bowel, $75 to $200; examination of chest, $25 to $100; examinations of shoulder, $25 to $50; examination of elbow, $15 to $50; knee and wrist, $15 to $50; hip and pelvis, $50 to $150; foot and ankle, $15 to $50; leg and knee, $25 to $75; for work done outside of the laboratory, from 50 to 500 per cent. additional, according to mileage. The report was adopted.

The following papers were also read: "Further Experimental Research Concerning Direct, Indirect and Secondary Skiagraphic Rays," by Dr. L. G. Cole, New York City; "The Induction Coil," by Mr. H. C. Snoop, Philadelphia; "Résumé of the Radiometric Dosage of Roentgen Ray Therapy," by Dr. M. A. Kassabian, Philadelphia; "Use of X-Ray Filters in Radiotherapeutics," by Dr. Reginald Morton, London, Eng.; "The Tube in Roentgen Therapeutics," by Dr. E. G. Williams, Richmond, Va.; "Possibilities of Formulating a Standard of Radioactivity," by Dr. C. D. S. Phillips, London, Eng.; "Roentgenologic Study of Certain Manifestations of Syphilis," by Dr. Percy Brown, Boston; "Action of the Roentgen Rays on the Central Nervous System," by Dr. Carlo Colombo, Rome, Italy; "Differential Diagnosis of the Chronic Non-tubercular Joint Diseases by Means of the Roentgen Ray," by Dr. Robert B. Osgood, Boston; "Skiagraphy of the Accessory Sinuses of the Nose," by Dr. E. W. Caldwell, New York City; "General Observations as to the Effects of the X-Rays on Hair and Other Tissue Elements," by Dr. W. S. Newcomet, Philadelphia.

State Boards of Registration

COMING EXAMINATIONS.

Oklahoma Board of Medical Examiners, Guthrie, September 25. Secretary, J. W. Baker, Enid.

New York Boards of Medical Examiners, Albany, September 25-28. Chief of Examining Division, Charles F. Wheelock, Albany.

Utah State Board of Medical Examiners, Salt Lake City, October 1. Secretary, R. W. Fisher, Salt Lake City.

Arizona Board of Medical Examiners, Phoenix, October 1-2. Secretary, Ancil Martin, Phoenix.

Colorado State Board of Medical Examiners, Denver, October 2. Secretary, S. D. Van Meter, Denver.

Idaho State Board of Medical Examiners, Lewiston, October 2. Secretary, J. L. Conant, Jr., Genesee.

Montana Board of Medical Examiners, Senate Chamber, The Capitol, Helena, October 2. Secretary, Wm. C. Riddell, Helena.

Minnesota State Board of Medical Examiners, Old Capitol Building, St. Paul, October 2-4. Secretary, W. S. Fullerton, St. Paul.

North Dakota State Board of Medical Examiners, Grand Forks, October 2-4. Secretary, H. M. Wheeler, Grand Forks.

Rhode Island State Board of Health, Room 313, State House, Providence, October 4-5. Secretary, Gardner T. Swarts, Providence.

Georgia Board of Medical Examiners (Regular), Capitol, Atlanta, October 9. Secretary, E. R. Anthony, Griffin.

Arkansas State Medical Examining Board, Little Rock, October 9. Secretary, J. P. Runyan, Little Rock.

Kansas State Board of Medical Registration and Examination, State House, Topeka, October 9. Secretary, F. P. Hatfield, Grenola.

Michigan State Board of Registration in Medicine, Lansing, October 9. Secretary, B. D. Harison, Detroit.

Mississippi State Board of Health, The Capitol, October 9. Secretary, J. F. Hunter, Jackson.

District of Columbia Board of Medical Supervisors, Washington, October 11. Secretary, Geo. C. Ober, Washington.

New Jersey State Board of Medical Examiners, Trenton, October 16-17. Secretary, J. W. Bennett, Long Branch.

Texas State Board of Medical Examiners, Houston, October 16-18. Secretary, T. T. Jackson, San Antonia.

Florida Board of Medical Examiners (Regular), Jacksonville, October 17-18. Secretary, J. D. Fernandez, Jacksonville.

Illinois State Board of Health, Great Northern Hotel, Chicago, October 17-19. Secretary, J. A. Egan, Springfield.

Louisiana State Board of Medical Examiners, New Orleans, October 19-20. Secretary, F. A. Larue, New Orleans.

Indiana Board of Medical Registration and Examination, Indianapolis, October 23-25. Secretary, W. T. Gott, Indianapolis.

Kansas June Report.—Dr. F. P. Hatfield, Secretary of the Kansas State Board of Medical Registration and Examination, reports the written examination held at Kansas City, June 12-13, 1906. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 82, all of whom passed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Hahnemann Med. Coll., Chicago	(1905)	84
University of Kansas (1906) the grade of 75 was reached by one, 76 and 77 by two each, 78 by one, 79 by three, 80 by two, 81 by five, 82 by four, 83 by seven, 84 by six, 85 by five, 86 by four, 87 by three, 88 by one, 89 by two, and 90 by one; total, 47.		
Kentucky School of Med.	(1895)	78
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(1906	83, 84
Washington University	(1906)	83
Barnes Med. Coll.	(1904) 80; (1906) 75, 79,	82
Homeopathic Med. Coll. of Missouri	(1895)	85
Kansas City Hahnemann Med. Coll.	(1905)	86
Eclectic Med. University	(1906) 79, 80,	80
University Med. Coll. of Kansas City (1906) 78, 78, 80, 80, 84,		84
Ensworth Central Med. Coll. (1905) 77; (1906) 75, 75, 75, 76, 76, 79, 80, 80, 82.		
Eclectic Med. Institute, Cincinnati	(1906)	83
University of Nashville	(1906)	78
Meharry Med. Coll.	(1906)	84

The following questions were asked:

EYE, EAR, NOSE, THROAT AND MEDICAL JURISPRUDENCE.

1. (a) How would you detect a foreign body in front of the lens? (b) behind the lens? 2. Give differential diagnosis of acute iritis and keratitis and give treatment of each. 3. Give etiology, pathology and treatment of acute otitis media purulenta. 4. Give symptoms, pathology and treatment of chronic otitis media. 5. Give diagnosis, symptoms and treatment of pharyngeal abscess. 6. Give treatment for the removal of foreign bodies lodged in the trachea or bronchus. 7. Give the positive signs of death previous to onset of rigor mortis. 8. Describe the patholoogy of a burn before and after death.

ECLECTIC MATERIA MEDICA.

1. (a) What are antiseptics? (b) Name five and give indications for their use. 2. Give botanical name and description of phytolacca, dose and indication for its use. 3. Give specific indications for the use of bryonia. 4. Name three drugs that have an action on the heart and give the indication for each one's use. 5. In what condition would you use apocynum? 6. Give the specific indications for the use of baptisia, sulphite of soda and colocynth. 7. In what conditions of skin and tongue would you give nux vomica? 8. In what pathologic conditions of the body would you give cathartics? 9. (a) What are emetics? (b) Name and classify three remedies used as emetics. 10. Give specific indications for the use of rhus tox., pulsatilla, lycopus and quinin.

ECLECTIC THEORY AND PRACTICE.

1. Describe and treat a case of cholera infantum. 2. What is specific medication? 3. What is meant by (a) excess, (b) defect and (c) perversion? (d) What are their effects on health? 4. Name four remedies that act specifically on the (a) respiratory organs, (b) digestive organs, (c) urinary organs and (d) the reproductive organs. 5. Give the special indications for (a) phytolacca, (b) apocynum, (c) eryngium, (d) nux vomica, (e) viburnum, (f) ergot. 6. Name five remedies used in sepsis. 7. Do you recommend the use of poultices? If so, why? 8. (a) Name the remedies usually indicated in typhoid fever; (b) scarlet fever. 9. How are remedies best prescribed? Why? 10. Treat a case of constitutional syphilis.

HOMEOPATHIC MATERIA MEDICA.

1. Give five prominent indications for sulphur. 2. Give five characteristics common to both bryonia and sanguinaria. 3. Name five leading remedies for typhoid fever and give three characteristic symptoms of each. 4. In beginning treatment of a chronic disease in which the patient has been previously overdrugged, what two remedies are usually recommended? 5. Give five characteristic indications for echinacea. 6. Write what you know of cratageus oxycanthe. 7. Differentiate between camphor and veratrum alb. in cholera. 8. Is the law of similars the only true law of curing disease? 9. Differentiate between mercury and kaliiod. in the treatment of syphilis. 10. Differentiate bladder symptoms of cantharides, terebintha and cannabis sativa.

HOMEOPATHIC THEORY AND PRACTICE.

1. Make a diagram of the chest and locate the valves of the heart thereon, on the surface. 2. Give differential diagnosis between gastralgia, gastric ulcer and duodenal ulcer. 3. Give symptoms and diagnosis of cirrhosis of the liver. 4. Give methods of diagnosis and symptoms in epidemic cerebrospinal meningitis. 5. Give diagnosis and treatment of herpes zoster. 6. Give differential diagnosis of renal and hepatic calculi and acute peritonitis. 7. Describe minutely typhoid fever in its different stages. 8. Name the abnormal heart sounds and points of intensity. 9. Give diagnosis and treatment of acute and chronic hepatitis. 10. Give differential diagnosis between acute yellow atrophy and sclerosis and hepatic cancer.

OBSTETRICS AND GYNECOLOGY.

1. Write two pages on diseases of pregnancy. 2. Face presentation—diagnosis and classification. 3. Cause of prolonged labor, and when is instrumental interference imperative? 4. Cause of pelvic deformity. 5 Placenta prævia—diagnosis and treatment. 6. Puerperal septicemia—history of the disease. 7. Puerperal insanity—classify and give prognosis. 8. Give indications for use of forceps. 9. Give four deformities of the pelvis. How would you detect them? 10. How would you treat fibroid tumor of the uterus?

PATHOLOGY.

1. Give the pathologic conditions of acute and chronic systitis. 2. Give the pathology of mitral stenosis. 3. Give the pathologic differences between chancre and chancroid. 4. Give the pathology of chronic parenchematous nephritis. 5. Give the pathology of amyloid liver and hepatic cancer. 6. Give the etiology and pathology of arterial sclerosis. 7. Give the etiology and pathology of multiple neuritis. 8. Give the etiology and pathology of pulmonary tuberculosis. 9. Give the etiology and pathologic condition in pachymeningitis spinalis. 10. Write two pages on the pathologic condition found in the different stages of acute croupous pneumonia.

CHEMISTRY AND TOXICOLOGY.

1. How is the specific gravity of a body heavier than water determined? 2. How are the decimal multiples of a gram designated? 3. What is electromotive force? 4. If a glowing charcoal ember is immersed in a jar containing oxygen, what takes place and what the result? 5. What is the treatment of acute poisoning by free iodin? 6. What are the chemical properties of HNO_3? 7. What is the treatment of poisoning by HCY? 8. In what quantities is NaCl, or chlorids represented by it, eliminated from a healthy person in twenty-four hours? 9. What is the treatment of chronic plumbism? 10. Give the principal tests for sugar in urine.

ANATOMY.

1. Describe the sphenomaxillary fossa, giving its boundaries. 2. Trace a blood corpuscle from the heart to end of great toe and return. 3 Which are the peculiar vertebræ (dorsal), and give peculiarities of each. 4. Bound Scarpa's triangle and name the various recognized triangles of the body 5. Describe the changes in the vascular system at birth. 6. Describe the lungs and give their histology. 7. Name structures divided in amputation of the thigh at the middle third. 8. Give the histology of the skin and name its appendages. 9. Describe the thymus gland, giving its minute anatomy and peculiarities. 10. Give the histology of the mammary glands.

SURGERY.

1. (a) Describe the operation for strangulated femoral hernia. (b) Including preparation of the patient. (c) Technic of the operation and the after treatment of the patient. 2. Give the differential diagnosis between malignant and non-malignant tumors. 3. Give treatment for a sprained ankle and name the tissues involved. 4. (a) Give the differential diagnosis between three varieties of hip-joint dislocations. (b) Give method of reducing each. 5. Give minute description of Chopart's operation. 6. Name the different varieties of talipes and give treatment of the last you name. 7. Describe minutely the ligation of the subclavian artery in its most accessible portion. 8. In gunshot wounds, what are the chief indications for operative treatment? 9. Name the different varieties of dislocation of shoulder joint and minutely describe reduction and treatment of any one of them. 10. (a) Give cause, diagnosis and treatment of tetanus. (b) How would you prevent it?

BACTERIOLOGY.

1. (a) Describe minutely and name the micro-organisms that produce cerebrospinal meningitis. (b) What bacterium does it closely resemble? (c) What three micro-organisms are usually associated in cerebrospinal meningitis? 2. (a) Differentiate parasites from saprophytes. (b) What are their functions? (c) What do they depend on for existence? 3. (a) Give general characteristics of *Bacillus tuberculosis*. (b) How would you stain the bacillus in sputum? (c) Name the most frequent channels of infection. (d) Name three bacilli that closely resemble the tubercle bacillus. 4. (a) Describe and name the micro-organism found in relapsing fever. (b) Are they ever found in any other disease? 5. (a) What are aërobis, anaërobics and faculative anaerobics? (b) Give examples of each bacteria. 6. (a) Give simple method of staining bacteria; (b) of staining bacteria in tissues. (c) Give Gram's method of staining. 7. (a) Give general characteristics of *Bacillus diphtheriæ*. (b) What bacteria are usually associated with diphtheria bacillus? (c) Give the difference between pseudodiphtheria bacillus and diphtheria bacillus. 8. (a) Describe the *Bacillus typhosus*.. (b) Give some of the common methods of infection from the bacillus of typhoid.. (c) Give the best methods of prophylaxis against typhoid fever. 9. What pyogenic organism produces pyemia? 10. (a) What is phagocytosis? (b) What is the difference between contagion and infection?

PHYSIOLOGY.

1. How is physiology studied? 2. Describe the main features of the circulation. 3. (a) Name the divisions of the vasomotor system. (b) From what part are the fibers of each known to arise? 4. (a) Name the fluids of the alimentary canal. (b) Where is the succus entericus found? 5. What conditions produce variations in the normal temperature? 6. Name the structures necessary for the formation of a reflex arc. 7. What three forces are in action in the absorption of digested food? 8. In what organs is the blood changed? 9. Give the symptoms of insufficient oxygen in the blood. 10. Mention three inorganic substances found in the body and state in what part each is found.

HYGIENE.

1. What are the most common sources of infection in diphtheria? 2. What means should be employed by persons prone to "catch cold"? 3. Does change in climate require any change in food? If so, what? 4. State the physical condition that makes the practice of taking hot baths inadvisable. 5. What constitutes hard and soft water? 6. What instructions as to hygiene should be given in a case of diphtheria? 7. Does alcohol possess a food action? 8. State the best means of disinfecting sputum. 9. What is meant by natural and acquired immunity from disease? Give an example of each. 10. What are the general effects of breathing impure air?

New Jersey June Report.—Dr. J. W. Bennett, Secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, June 19-20, 1906. The number of subjects examined in was 14; total number of questions asked, 135, from which candidate was required to answer 90; percentage required to pass, 75. The total number of candidates examined was 56, of whom 53 passed and 3 failed. The following colleges were represented:

College.	Year. Grad.	Per Cent.
PASSED.		
George Washington University	(1900)	75.1, 83.9
Georgetown University	(1904)	80.5, 82.1
Howard University	(1905)	79.4
Yale University	(1890)	81.
Hahnemann Med. Coll., Chicago	(1891)	81.5
College of P. & S., Baltimore	(1904) 76.3; (1905) 83.1; (1906)	85.2, 88.
Baltimore Med. Coll.	(1897) 85.9; (1905) 77.8, 78; (1906)	88.9
New York University Med. Coll	(1885)	80.
Long Island Coll. Hosp	(1904) 75; (1906)	83.5, 85.3
Cornell University	(1905)	81.1.
Woman's Med. Coll., Philadelphia	(1903) 82.6; (1906)	88.5, 78.7
Medico-Chirurgical Coll., Philadelphia	(1905) 77.9, 81; (1906)	76.7, 77.1, 79, 82.3, 83.3, 85, 85.4, 85.8, 86.4.
Jefferson Med. Coll.	(1905) 81.6; (1906)	77.8, 79.1, 80.3, 82.3, 82.5, 83.5, 84.9, 85.5.
University of Pennsylvania	(1894) 78.6; (1906)	84.2
Hahnemann Med. Coll., Philadelphia	(1906)	78.6, 81.5
Medical Coll. of South Carolina	(1901)	81.
University of Vermont	(1889)	81.2
Medical College of Ohio	(1903)	77.
Queen's University, Ontario	(1903)	84.7
Woman's Med. Coll., Ontario	(1906)	89.8
Western University	(1905)	84.5
FAILED.		
Baltimore Med. Coll	(1905)*	
Baltimore University	(1904)*	
Boston University	(1904)*	

* Percentage not given.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Treatment of Chlorosis.

For the successful treatment of this condition five methods should be adopted: 1, Dietetic; 2, hygienic; 3, medicinal; 4, non-medicinal; 5, mental.

DIETETIC.

The food should be light and nutritious and capable of easy digestion and ready absorption. At first a small or moderate quantity should be given. Milk is one of the most useful foods when it is easily digested, but it fails in two ways of being a perfect food; it contains too little iron and large quantities must be taken to satisfy the patient.

A cupful of peptonized milk 3 or 4 times a day will be useful when unprepared milk disagrees. A good substitute milk is a mixture of equal parts of cream and hot water oz. of each), to which a little sodium bicarbonate and a teaspoonful of brandy may be added. All forms of animal food, prepared in a manner easy of digestion, are beneficial. G. Sée recommends scraped raw beef, as much even as 14 oz. a day. Raw, scraped, or powdered meat may be given in consommé, in the form of sandwiches, or mixed with chocolate or Burgundy and water. The digestive power for this kind of food must be carefully watched, and if necessary, aided by the addition of some appropriate digestive ferment. Eggs in any form are valuable, as they are generally rich in iron and easily digested.

Animal albuminates should predominate in the diet at first. Easily digested fat, such as butter, cream, broiled fat bacon, cod-liver oil, should not be added. Green, fresh vegetables, especially in the form of purées are useful, not only as food, but to obviate the tendency to constipation.

HYGIENIC.

At the outset rest in bed in a well ventilated room or on a couch in fresh air should be particularly enforced. In chlorosis the cardiac muscle undergoes fatty changes, and if the heart wall is to recover itself and perform its function normally afterwards, it must have as much rest as possible during the treatment. For some time the patient should not be allowed to rise before midday. As soon as some improvement in the blood condition is observable, and some return of healthy functional activity is apparent, a moderate amount of gentle out-of-door exercise may be permitted, and this should be gradually increased with each increasing gain in health and strength.

Rectify such disadvantages of the life of the patient as can be ascertained. Over-pressure at school, unwholesome conditions of work or amusement, late hours, worry, any emotional strain or excitement, sexual aberrations, tight lacing, etc., are points to which the physician's attention will be directed.

MEDICINAL.

Free elimination by the bowels, kidneys and skin must be maintained. Autotoxemia is a very frequent cause of chlorosis. A saline laxative given every morning is usually of great value.

In many cases the laxative iron mixtures are to be preferred. The following are excellent prescriptions:

R.	Tinct. ferri chloridi	m. x		60
	Magnesii sulphatis	gr. xx	1	20
	Sodii sulphatis	gr. xx	1	20
	Glycerini	ʒss	2	
	Infusi quassiæ, ad	℥i	30	

M. Ft. mist. Sig.: Two tablespoonfuls to be taken three times daily after meals.

If gastric symptoms are prominent, the following may agree with the patient better:

℞.	Ferri sulphatis	gr. iv		24
	Sodii bicarbonatis	gr. x		60
	Sodii sulphatis	ʒi	4	
	Tinct. zingib	m. xx	1	20
	Spiritus chloroformi	m. viii		48
	Infusi quassiæ, ad	℥i	30	

M. Ft. mist. Sig.: Two tablespoonfuls to be taken twice daily after meals.

Iron in some form is almost invariably indicated, yet it is well to remember that an alterative, arsenic, copper or mercury, will sometimes act much better than iron alone. It is surprising how rapidly many chlorotic patients improve on alterative treatment, even when there is no evidence whatever of specific disease. Arsenite of copper in doses of 1/100 gr. two or three times a day after meals, or the specific tincture of copper of the eclectics in doses of 3 to 6 minims will prove very efficacious. Fowler's solution (m. v to x) in water after eating; small doses of arsenous acid (1/100 to 1/60 gr.), or the solution of arsenic and mercuric iodid (5 to 10 minims), are all valuable in anemic conditions. Indeed, inunctions of a very small amount of mercurial ointment once a day, or every other day, or small doses of mercuric chlorid, from 1/60 gr. to 1/40 gr., are often of decided benefit in chlorosis.

Nearly every form of iron has been employed, the preference seeming to be for Blaud's mass.

The *following prescriptions* are all *good:*

℞.	Ferri et potassii tartratis			
	Liq. potassii arsenitis, āā	ʒi	4	
	Aquæ dest., q. s. ad	℥iv	120	

M. Sig.: Five to ten drops in wine before meals twice daily.

℞.	Ferri et potassii tartratis	ʒiiss	10	
	Ext. cinchonæ	ʒiiss	10	
	Glycerini	ʒv	20	
	Aquæ dest.	ʒiiss	10	
	Vini (Madeira), q. s. ad	Oii	960	

M. Sig.: Take as a tonic; wineglassful three or four times a day.

R.	Ferri sulphatis	gr. xxiv	1	44
	Magnesii sulphatis	ʒvi	24	
	Acidi sulphurici aromatici	ʒi	4	
	Tinct. zingiberis	ʒii	8	
	Infusi gentianæ comp., ad	℥viii	240	

M. Ft. mist. Sig.: A sixth part twice a day.

℞.	Vini ferri amari	℥vii	210	
	Tinct. nucis vomicæ	ʒiv	16	
	Liq. potassii arsenitis	ʒii	8	

M. Sig.: Two drams in a wineglassful of water after meals.

℞.	Ferri sulphatis exscic.			
	Potassii carbonatis, āā	gr. xxx	1	95
	Ext. nucis vomicæ	gr. v		30

M. Ft. Cap., No. xx. Sig.: One three times daily, after meals.

The following formulas for pills are valuable where one wishes an iron laxative preparation, particularly where there is amenorrhea:

℞.	Ferri sulphatis exscic.	gr. xx	1	30
	Potassii carbonatis	gr. xx	1	30
	Myrrhæ pulveris	ʒi	4	
	Aloes socotrinæ	ʒss	2	

M. Ft. pil., No. xxx. Sig.: Take two or three a day.

℞.	Ferri et sodii pyrophosph	ʒss	2	
	Extracti rhei	gr. xiv		84
	Extracti aloës	grs. viii		48
	Extracti taraxaci, q. s. ft. mass			

M. Ft. pil., No. L. Sig.: Take two night and morning.

Intestinal antiseptics are as much needed as laxatives. The following prescription has been highly recommended as an intestinal antiseptic:

℞.	Creasoti (Beechwood)	mxxxvi	2	16
	Ol. gaultheriæ (Mercks)	mxxxvi	2	16
	Eserin salicylate	gr. 3/5		036
	Pancreatin	gr. lxxii	4	32
	Pulv. ext. cascara sag	gr. xxxvi	2	16
	Pulv. ext. colocynth co	gr. xviii	1	08
	Pulv. oxgall	gr. xxxvi	2	16
	Pulv. acaciæ			
	Aquæ			
	Glycerini			
	Pulv. glycyrrhiæ, āā, q. s. ft. caps., No. 72			

Sig.: One after each meal.

The sulphocarbolates are also excellent intestinal antiseptics and so is beta naphthol. This may be given in two-grain doses three times daily.

It is advisable in treating all cases of chlorosis to administer some intestinal antiseptic.

Often it will be necessary to give some cardiac tonic like digitalis or strophanthus.

NON-MEDICINAL.

Hydrotherapy is of the greatest value as an adjuvant to medicinal treatment. It cannot well be dispensed with.

Enteroptosis may be helped by a cold abdominal douche and by abdominal massage. Elimination of toxic waste matter may be facilitated by warm bath, electric light bath, or sun bath to beginning of perspiration, followed by short cold application by rubbing the patient with a mitten or coarse towel, with water at about 60°, or by giving the patient a cold douche of from 5 to 20 seconds' duration at temperature 70° to 60.° The temperature should be lowered 1 degree daily and the pressure increased. This is a powerful circulatory stimulant and combative of autointoxication as well as a powerful stimulant of vital resistance. Various general graduated cold procedures are invaluable.

For vasomotor spasm and visceral anemias such measures as the general Scotch douche, visceral douches, short percussion douches, alternate compress, etc., are very effective. Cold sponging over the spine and outside and inside of thighs increase elimination and stimulate circulation. Constipation may be relieved and peristaltic activity increased by drinking a glass of cold water, preferably carbonated water, before breakfast; small cold enema; fomentation over liver twice daily, followed by heating compress during interval; wet girdle at night; cold fan douche to abdomen; cold percussion douche to spine; abdominal massage.

General massage, properly given, is a valuable means of treating chlorotic patients who are unable to take active exercise. It acts by increasing the circulation of the blood, by strengthening the muscular system, as an eliminant of waste matter, as a stimulant to the digestive system, as a mild cathartic by increasing peristalsis, as a sedative to the nervous system and as a sleep producer.

Static and Faradic electricity will aid in the treatment of these cases. Faradism to the chest will stimulate respiration and oxygen inhalations will improve the quality of the blood.

Chlorotic patients should drink plenty of water. Under certain conditions water is a hematic. It washes away waste matter and paves the way for growth of new material. Chalybeate remedies may be rendered more effective by adding to them large draughts of water.

MENTAL.

The physician should get his patient into a cheerful, hopeful frame of mind. The hopefulness and optimism of the physician do far more than cure feeble minds and faltering wills. They assist in the cure of every disease he encounters. Alteratives and tonics for the mind are often quite as important and efficacious as alteratives and tonics for the body. Get the patient out of her introspective moods. Cheerful companions, a change of place and scenery, a visit to some chalybeate springs inspire the psychical impulses and form a great incentive to those who are despondent and prone to worry, to exert themselves, and so aid in their own recovery.

Tonics are both mental and material. Hope is a capital tonic. Depressing mental conditions often neutralize the best medical treatment. The prospect of recovery will often bring about satisfactory results almost in the absence of drugs, and certainly often helps out wonderfully a lame line of treatment. Mental tonics should always be combined with material tonics.

Collodion and Acetanilid Dressing.

Dr. F. G. Mohlan, Pueblo, Colo., writes calling attention to the fact that an excellent dressing—one that is aseptic, odorless, clean and white, as well as flexible and adhesive—is collodion, to which is added 5 or 10 per cent. of acetanilid. He says that he has used it for over six years with great satisfaction, in cases in which a collodion dressing is indicated.

The Treatment of Chronic Constipation.

In the treatment of chronic constipation, according to M. J. Krohn, in the *Denver Medical Times*, one must first ascertain the cause and so direct the treatment. He divides the treatment of chronic constipation into three classes: 1, The dietetic; 2, the mechanical; 3, the medicinal. The foods prescribed should be rich in water, and cellulose should be ordered. Thus graham or rye bread, all fruits, except persimmons, fresh vegetables, soups, fats, buttermilk, cider, etc., are of value. If there is gastric hyperexcitability the alkalies are indicated, while all concentrated foods are to be avoided.

If there be an enteritis, such foods as cauliflower, spinach, tender asparagus and mashed potatoes are permissible. He advises the habit of taking cold water before meals and on going to bed.

The mechanical treatment, according to Krohn, consists in massage, gymnastics, electricity, Swedish movements and the cannon-ball massage over the abdomen. Contrary to the opinion of some authorities, he recommends enemas and irrigations as very efficacious.

The medicinal treatment consists of such drugs as belladonna, jalap and cascara sagrada.

If there is a decrease of mucus, ammonium chlorid and sodium phosphate should be given; and when there is excessive hyperacidity, accompanied by constipation, the following combination is recommended:

℞.	Magnesiæ calc.	℥ss	15	
	Pulv. rhei	ʒii	8	
	Sodii carbonatis	ʒi	4	
	Extracti belladonnæ			
	Extracti nucis vomicæ, āā	gr. ii		12

M. Sig.: One-half teaspoonful three times a day one-half an hour before meals.

If the constipation is associated with the absence of hydrochloric acid, the following combination is recommended by this author:

℞.	Acidi hydrochlorici dil.	℥ss	15	
	Strychniæ sulphatis	gr. 1/3		02
	Tincturæ rhei q. s. ad	℥vi	180	

M. Sig.: One tablespoonful in a wineglassful of water three times a day, before meals and taken through a glass tube.

In those cases occurring in adipose individuals with a tendency to passive congestion of the intestinal canal and having a tendency to hemorrhoids, Krohn recommends the neutral salts, such as magnesium sulphate, sodium phosphate and sodium and potassium tartrate. The very drastic purgatives should be avoided.

F. E. Prewitt, in the same periodical, after enumerating the various causes of constipation, states that the medicinal treatment of constipation is of the least importance. Not infrequently the slightest change in the diet will overcome the constipation. Consequently, the diet should be carefully inquired into and carefully regulated, remembering that single articles of food, such as milk, may serve as a laxative for one person and tend to constipate another. In addition to giving a somewhat abbreviated diet list, he emphasizes the importance of instructing the patient to go to the toilet regularly each day at the same time, whether there is a desire or not, and at the same time advising him not to put in his time reading a newspaper or a book while at stool, but to keep his mind concentrated on the purpose for which he is there, and to remain there for fifteen minutes if necessary. He is of the opinion that vibratory massage will in time occupy a place in the treatment of constipation. Gymnastics are invaluable in the treatment of constipation, and can be carried out at home if a gymnasium can not be obtained. Of the medicinal preparations he regards cascara sagrada as the best preparation and jalap is considered next in order of efficiency and acts best as a rule combined with podophyllin and aloes and belladonna.

Inflamed and Protruding Piles.

The following combination is recommended by the same periodical in the treatment of inflamed and protruding piles:

℞.	Cocainæ hydrochloratis	gr. iiss		
	Sol. adrenalin. chlorid. (1-1,000)	f.ʒss	2	
	Bismuthi subnitratis	gr. x		65
	Petrolati liq	℥i	30	

M. Ft. unguentum. Sig.: Bathe the parts in cold water and apply the ointment after each stool.

Acute Nephritis in Scarlet Fever.

In the treatment of true nephritis following scarlet fever, Hughes-Bennett, according to an abstract in the *Med. Review of Reviews*, recommends the following combination:

℞.	Potassi acetatis	ʒii	8
	Spts. etheris nitrosi	f.℥ss	15
	Aquæ q. s. ad	f.℥ii	60

M. Sig.: A teaspoonful every two hours well diluted in water.

Or:

℞.	Hydrarg. chloridi mitis		
	Pulv. scillæ		
	Pulv. digitalis, āā	gr. ¼ to ½	015-.030

M. Ft. pil. No. i. Sig.: One such pill every three or four hours.

In addition to the foregoing treatment, saline purgatives are recommended with hot-water or hot-air baths taken twice daily.

And in scarlatinal rheumatism some preparation of iron should be given alternating with the following combination:

℞.	Ammonii salicylatis	ʒii	8
	Elix. simplicis		
	Syrupi simplicis, āā	f.℥ss	15
	Tincturæ cardamomi co	f.℥i	30

M. Sig.: One teaspoonful well diluted in water four times a day.

Multiple Warts.

The following combination is recommended by the *Med. Review of Reviews* to aid in the removal of multiple warts:

℞.	Chloralis hydratis		
	Acidi acetici	f.ʒiss	6
	Acidi salicylici		
	Spts. etheris nitrosi, āā	f.ʒi	4
	Collodii	f.ʒiv	15

Misce. Sig.: Apply to the warts twice daily.

Medicolegal

Cross-Examination of Physician—Discrediting Evidence.

The Supreme Court of Washington says, in the personal-injury case of Williams vs. Spokane Falls & Northern Railway Company, that the plaintiff, no doubt, waived his privilege when he permitted a physician who had examined him in his professional capacity to give his testimony without making any objection thereto. But he had a right to discredit the witness by showing interest or bias in the case, and legitimate cross-examination was perfectly proper for that purpose. A wide latitude is usually, and should be, given on cross-examination, the extent of which must be governed largely by the discretion of the trial court. Such discretion will only be reviewed for abuse thereof.

The principal defense in this case was that the plaintiff was in a large measure simulating his injuries. The defendant's evidence tended to show that he was afflicted with what the physicians termed hysterical paralysis, and that the pendency of a lawsuit had a strong tendency to prevent improvement in such cases. Evidence with regard to the frequency of the visits to him at the hospital of the defendant's claim agent was received by the trial court on the theory that it had a tendency to rebut the evidence of the physicians by discrediting their statements that the plaintiff was suffering from hysterical paralysis, because under such circumstances the attending physicians would not have permitted the claim agent to visit the plaintiff. The Supreme Court holds that the evidence was admissible for that purpose, and for that reason only.

Power of State Association—Certificate Requirements.

The Supreme Court of Alabama says, in Brooks vs. State, that section 5333 of the code of 1896 reads: "Any person who practices medicine or surgery without having first obtained a certificate of qualification from one of the authorized boards of medical examiners of this state must, on conviction, be fined not less than $25 nor more than $100." Section 3262 says: "The standard of qualification, the method or system and the subjects of examination of practitioners of medicine shall be prescribed by the Medical Association of the State of Alabama and must be observed by the boards of medical examiners." It will be observed, the court continues, that the lawmakers have clothed the Medical Association of the State of Alabama with full authority to prescribe the rules and regulations governing the issuance of certificates to medical practitioners, and the Alabama statutes in this respect are not only intended as a means of maintaining a high standard in the ranks of the medical profession, but are designed to protect the public from imposition and fraud by authorizing the state medical association to prescribe the rules and restrictions governing the issuance of certificates to those engaged in or desiring to engage in the practice of medicine.

The state medical board adopted in 1899 the following ordinance: "Be it ordained by the Medical Association of the State of Alabama that hereafter all certificates conferring the privilege of practicing medicine in this state, issued by county boards of examiners, shall be countersigned by the senior censor of the state association before the same shall become legal and valid." It is to be noted, the court says, that every certificate issued by a county board after the adoption of the above had to be countersigned by the senior censor, else it would be invalid. The state proved a *prima facie* case against the defendant (party first named, who was convicted of a violation of section 5333, quoted above), who attempted to defend under a certificate issued by the county board, Jan. 29, 1900, but which had not been countersigned by the senior censor of the state, and which was insufficient, and an objection by the state to the introduction of same was properly sustained.

There was no error in sustaining the state's objections to the defendant's attempt to introduce a diploma or proof of the length of time he had practiced medicine. These facts may have been sufficient to authorize the county board to issue him a certificate without undergoing an examination, but could in no sense make valid a certificate not issued in conformity with the rules of the state association.

It was not competent for the defendant to show the action of the Medical Society of Marion County, since he did not show that it issued him a certificate prior to the adoption of the ordinance in 1899. Neither was it competent to show that other physicians had no certificates or had not stood examinations. If they were violating the law it did not justify the defendant in doing so.

Liability of Company Silent When Services Rendered.

The Supreme Court of Rhode Island says that the case of Nelson R. Hall vs. New York, New Haven & Hartford Railroad Company was brought to recover $1,573.75, with interest, for services rendered during a period of twenty weeks and for supplies furnished by the plaintiff, a physician and surgeon, to the defendant's employé, a carpenter, who was injured in the course of his employment at its power station in Warren, R. I., by steam and hot water in an accidental explosion. The company denied liability and claimed that it never engaged the services of the plaintiff. But it appeared that on the day after the accident the physician sent to New Haven, where the principal offices of the company were located, by the foreman under whom the man was working when injured, a report, stating that on the preceding morning he was called to the power station in Warren by the station agent to attend the man, naming him, who had been scalded by steam and hot water which came from condenser pipe. "The scalds," the report continued, "appear to be of the second degree and involve both legs and the lower third of both thighs. The patient now suffers from prolonged shock and is much exhausted. . . . Trained nurse is in attendance." What the foreman did with the report did not appear, but at the trial the company produced it, and in the absence of explanation as to how or when it obtained possession of the same it was not unreasonable to infer that it was delivered to the company with reasonable celerity.

What was the duty of the company in the premises? To let the physician remain ignorant of the truth of the invalidity of his employment in its behalf? To permit him to incur large expense and employ valuable time in a malodorous and repulsive employment in the faith that he would be compensated by a responsible company, while that company intended that he should be compelled to resort for payment to the nonresident injured mechanic, whose expenses would be greatly increased and whose resources would be greatly diminished, if not cut off, by this very accident, which would deprive him for a long time of the ability to perform his daily toil? The ordinary physician is not an eleemosynary institution, and, although he often does perform services for charity, it can not be expected that he will compete with the hospitals that are established for general public use. It was the duty of the company to early apprise the plaintiff of the true condition of affairs; to either disaffirm the act of its station agent in toto (entirely) or to explain the extent of his authority to the physician in order to give him the opportunity to make further arrangements for treatment of the patient beyond the time of any authorized limited employment. But the company did neither; it neither accepted nor rejected the services of the physician under his supposed employment, but it elected to *remain silent.*

The evidence also disclosed that on two occasions, the first of which was soon after the accident, the claim agent of the company and its physician visited the patient to ascertain if he was in a condition suitable for removal to a hospital, and after examination on each visit found that he was not. But no fault was found by them with the treatment that he was receiving. When the physician rendered his bill for $1,573.75, and on two later dates sent similar bills, no notice of them was taken by the company. Similar silence was maintained concerning the bills as was observed in the matter of the report.

Under these circumstances, whether or not the company ratified the act of its station agent in employing the physician to attend the injured man, the court holds, was a question of fact to be determined by the jury. As their verdict was for the physician, without any special finding, it might be safely assumed that they found a preponderance of evidence satisfying them of such ratification. This court can not say that the verdict in this respect was against the evidence. Moreover, the court says that, although the physician had rendered several bills to the company, each showing the amount charged by him for his services, for which this suit was brought, the company introduced no testimony tending to contradict that of the physician, who went into a minute and detailed explanation of the nature of his services and testified that the prices charged by him for the same were reasonable. In such circumstances the court is unable to say that the verdict was excessive.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

September 1.

1 Japanese Naval Sanitation. B. K. Takaki, Tokyo, Japan.
2 *Banti's Disease (Splenomegalia and Cirrhosis of the Liver). M. Einhorn, New York.
3 *Brief Résume of the World's Recent Cancer Research. W. S. Bainbridge, New York.
4 *Habitual Constipation, Viewed from the Standpoint of Modern Evolution of Dietetics, is a Physiological Phenomenon. C. D. Spivak, Denver.
5 *Acroparesthesia. W. W. Lesem, New York.
6 *Two Cases of Varicose Veins Successfully Treated with the X-Rays. J. C. McGuire, Washington, D. C.

2. **Banti's Disease.**—Einhorn has seen eighteen cases, which he has tabulated and placed in three groups: 1. Pure form; splenomegalia, anemia, cirrhosis of the liver, ascites. 2. Hemorrhagic form, showing in addition to the symptoms just enumerated, gastric and intestinal hemorrhages. 3. Splenomegalia, enlargement of the liver, anemia, sometimes associated with grave gastric symptoms. Treatment depends on the stage of the disease and the group to which it belongs. In some cases extirpation of the spleen may be considered. The x-ray treatment has given good results. Gastric hemorrhages should be treated according to the accepted rules. The physician may be a little bolder in giving food in these cases. Stomach symptoms should be combated and a strengthening diet is indicated. The administration of sodium iodid with iron and sometimes arsenic is generally followed by good results.

3. **Résumé of World's Cancer Research.**—Bainbridge states that cancer occurs with the same essential characteristics throughout the vertebrate creation. There is a variety of conflicting evidence in reference to the influence of diet on the development of cancer. However, cancer is comparatively rare in hot countries, especially in those whose inhabitants subsist largely on vegetable diet. With certain exceptions it seems to be prevalent where animal diet is mostly consumed. Black races are remarkably immune from cancer, yellow races are more prone to it, while the white races are the most susceptible. It occurs when the tissues are undergoing retrograde metamorphosis. Cancer is undoubtedly on the increase. The principal increase involves the alimentary tract. There are certain districts called "cancer belts." Such areas are usually low-lying and damp. Women are attacked by cancer far earlier and more often than men. Much recent experimental work points to the cell as the essential element in the development of cancer. The parasitic theory is discredited by the Harvard Commission. The report of the Imperial Cancer Research Fund destroys all known theories of the origin of cancer, but proposes no new theory. Surgical treatment has been established on a firmer basis than ever before.

4. **Habitual Constipation.**—Spivak summarizes his paper as follows: Habitual constipation in a great many cases is due to a mistaken diagnosis. The patient makes the diagnosis himself, based on his sensation only. Once the diagnosis is made, and then corroborated by the physician, it becomes an etiologic factor. The tendency of civilized life in general and of modern dietetics in particular is toward the production of lesser quantities of fecal matter and less frequent evacuation. There is no doubt that the habit of regularity is beneficial, but no one should allow every unusual sensation to become a source of morbid concentration. The treatment of habitual constipation should be directed more toward rectifying the errors of the mind than those of the body. The patient should be impressed with the fact that certain foods are better absorbed than others, and that it is not imperative for the preservation of good health to have a movement of the bowels daily, nor is the small quantity indicative of disease.

5. **Acroparesthesia.**—Lesem defines acroparesthesia as an affection of the peripheral nerves, characterized by burning, pricking, pins-and-needles, numb, crawling, itching or breaking sensations disturbed usually over the extremities. Not infrequently, however, the head, face, chest, back and abdomen are involved. The viscera are rarely affected. Among 200 cases seen by Lesem, 94.5 per cent. occurred in women. The majority of the patients were between the ages of 30 and 40 years. Circulatory and gastrointestinal disturbances appear to be the cause of the large majority of the writer's cases. Menstrual and puerperal disorders occurred in 12 per cent. Occupations such as tailoring and constant immersion of the hands in water occurred as an etiologic factor in 1 per cent. The symptoms vary with the intensity of the disease. The course of the disease is either short or it becomes chronic and progressively worse. The types most susceptible to treatment are those dependent on puerperal and climateric disorders and on autointoxication.

6. **Varicose Veins Successfully Treated with X-Ray.**—McGuire reports two cases. The first patient was a woman, aged 45, with eczema of both legs, complicated with varicose veins and an ulceration on the right leg. The ulcer resisted all treatment, until the application of the x-ray. This caused inflammation of the skin, which extended over the whole surface of the leg. The treatment was stopped for four days, when it was again tried. Inflammation resulted, but during the next five days, without the application of the x-ray, the dermatitis gradually subsided and by the end of the week had

disappeared. The ulcer completely healed and the varicose veins disappeared. The second patient was a man 50 years of age with a large bunch of varicose veins on the right leg. Treatment by the *x*-ray is gradually reducing the tumor and without causing any great reaction of the tissues. The rays cause contraction and atrophy of the tissues and those of low vitality easily break down.

Boston Medical and Surgical Journal.

August 30.

7 Contribution to the Chemistry of the Bacterial Cell and a Study of the Effects of Some of the Split Products on Animals. (To be continued.) V. C. Vaughan, Ann Arbor, Mich.
8 *Care of Far-Advanced Cases of Pulmonary Tuberculosis. S. G. Bonney, Denver.
9 Sub-pectoral Abscess. J. H. Musser, Philadelphia.
10 Fracture of the Fifth Metatarsal Bone by Inversion. F. J. Cotton, Boston

8. Care of Far-Advanced Cases of Pulmonary Tuberculosis.—Bonney summarizes his paper as follows: 1. About one case out of every four or five may reasonably be expected to exhibit a pronounced diminution of temperature by the end of a week or ten days. 2. The remaining cases do not show any bad results from its employment, other than those due to the occasional intolerance of the system for the serum of a horse. This so-called reaction, which is independent of the specific ture of the remedy, but common to all other serum preparations, bears no relation to the ultimate results obtained. 4. Some cases show marked improvement in spite of temporary discomfort in the way of chills, fever, urticaria and painful swelling with stiffness of the joints, while others exhibit no improvement, although there is entire absence of constitutional disturbance. 5. Reaction may take place within twelve hours after the use of the serum or it may be delayed for six weeks. 6. Occasionally the improvement is delayed indefinitely until the occurrence of the reaction, following which there may be complete and enduring subsidence of the fever. 7. As a result of the serum the temperature either may subside to normal or may be reduced several degrees, remaining, however, somewhat elevated. 8. He has not been in favor of its continued subcutaneous employment, and has given, as a rule, not over four or five doses at intervals of one or two days and awaited results. 9. During the past nine months he has practiced the tentative administration of the remedy by the rectum for ten or twelve doses before resorting to its hypodermatic use, in order to avoid the discomfort which sometimes follows its injection into the tissues. 10. He has seen unquestionably good results attend its use even when streptococci were not found in the sputum, and believes that even under such conditions the clinical evidences of a persisting sepsis may sometimes afford, from a humanitarian standpoint, a warrantable basis for its use.

New York Medical Journal.

September 1.

11 Address on Climatology. E. L. Shurly, Detroit, Mich.
12 Use of the Pessary. H. A. Slocum, Philadelphia.
13 Treatment of Uterine Retrodisplacement. R. S. Hill, Montgomery, Ala.
14 Typhoid Infections of the Appendix. M. A. Austin, Anderson, Ind.
15 *Electrolysis in the Treatment of Deafness Due to Stricture of the Eustachian Tubes. D. G. Yates, New York.
16 Diagnosis of Tumors of the Stomach. J. J. Gilbride, Philadelphia.
17 Case of Little's Disease. A. Glascock, Washington, D. C.
18 Review of the Present Day Therapy of Pulmonary Tuberculosis. B. M. Randolph, Washington, D. C.
19 *Four Cesarean Operations and a Labor Complicated by Fibroma in which Hysterectomy was Performed on the Sixth Day of the Puerperium. J. Aspell, New York.
20 Is Nervous Dyspepsia a Disease from Generis? A. Rose, New York.

15. Electrolysis in Stricture of Eustachian Tubes.—Yates reports four cases of deafness due to stricture of the Eustachian tubes in which electrolysis was employed successfully. The apparatus consists of a gold wire, olive tipped, bougie attached by a cord to the negative pole of a galvanic battery of sufficient voltage to overcome the body resistance. Forty volts is strong enough. An ordinary hand electrode is connected with the positive pole of the battery and grasped by the patient. The Eustachian catheter, insulated by winding with rubber tissue, is placed in position and the ear inflated in the ordinary manner to make sure that the catheter is properly situated. The iodin, menthol and camphor vapor is used in inflation, and has a valuable influence in preventing infection. The bougie is now passed through the catheter and on through the tube as far as it will go without exercising force, and the current turned on until three to five milliampères are indicated by the meter. No stronger current is necessary. The sensations of the patient must also guide the surgeon, for pain should be avoided. Having engaged the stricture, the bougie is allowed to lie snugly in contact for a few moments, when it will be found possible to advance the point a short distance. This maneuver is repeated until the stricture is passed and the surgeon is satisfied that the tube is open, when the bougie is slowly withdrawn and the current turned off. Inflation should be performed before, but not immediately after the bougie is used, for fear that air should be forced through a possible puncture of the mucous membrane into the loose surrounding tissues and so set up a traumatic emphysema. Treatments with the bougie should be about ten days apart, with one or two inflations between.

19. Cesarean Section.—Aspell reports 5 cases. In 2 the existence of a deformed pelvis was the indication for Cesarean section. In 2 cases labor was complicated by the presence of a fibroma. In 1 of these cases the tumor did not obstruct the delivery, but in the uterine contraction, after the third stage, the tumor of its own weight obstructed the free discharge of lochia and became so great an irritant that its removal was imperative in the first week of the puerperium. In the second case the tumor was situated in the broad ligament.

Lancet-Clinic, Cincinnati.

August 25.

21 Prophylaxis and Treatment of the Summer Diarrheas of Children. A. Friedlander, Cincinnati.
22 *Measure for the Quantity of X-Rays. K. Dunham, Cincinnati.
23 Feeling for Fees. E. S. McKee, Cincinnati.

September 1.

24 Case of Banti's Disease. H. J. Whitacre, Cincinnati.

22. Measure for Quantity of X-Rays.—Dunham's instrument consists of a selenium cell, which is placed inside of a wooden pill-box and surrounded by tungstate of calcium. This and a volt meter are placed in series in a direct current of not less than 60 volts. When this is placed before an *x*-ray tube the tungstate of calcium is caused to fluoresce and the light derived from the fluorescence causes the resistance of the selenium cell to be reduced (as does any light). The fluorescence is, of course, much less powerful than a 15-candle power lamp. This lowering of resistance in the cell allows the current to flow more readily, and this can be directly measured by a very sensitive volt meter. The next instrument depends for its action on the fact that a 2 per cent. solution of iodoform in chloroform is very easily and uniformly affected by the *x*-rays. Its appearance when so treated varies from a light pink to a very dark reddish brown. The second instrument is as follows: The selenium cell and volt meter are put in series as before, but no fluorescent salt is used. The wooden box is removed and the cell placed in a light tight box. The resistance of the selenium cell is reduced by the electric lamp beyond a partition. The light must pass from a lamp to the cell through the bottle because of the small aperture. To make this doubly certain the opening is fitted with a small cylinder so that the rays must pass as desired. When it is desired to measure a given dosage all that is necessary to do is to fill the bottle, place it in the box and make the reading. The solution is clear and practically all the light passes to the cell. The resistance drops and the voltage as read on the meter goes up. The bottle is now removed, laid on the surface of the patient near the part to receive the irradiation. After the treatment it is quickly placed in the box and the reading taken. The quantity of *x*-rays will be read by the difference of the voltage before and after the exposure.

St. Louis Medical Review.

August 25.

25 Incessancy of Rhythmic Reiteration in Organic Matter. S. S. Wallian, New York.
26 Origin and Heredity of Matter. (To be continued.) J. Wright, New York.

University of Pennsylvania Medical Bulletin, Philadelphia.

August.

27 Clinical Study of Gastroptosis, with Special Reference to the Value of the Bismuth Skiagraph Shadow in Determining the Topography of the Gastrointestinal Tract. C. B. Worden, J. Sailer, H. K. Pancoast and G. G. Davis, Philadelphia.
28 *Peculiar Pressure Symptoms Due to Enlarged Tuberculous Bronchial Glands. T. S Westcott, Philadelphia.

28. Pressure Symptoms Due to Enlarged Bronchial Glands.—The subject of this report first came under Westcott's notice when she was just past three months of age. The upper part of the chest was noticeably high and full. At the age of two months the baby began not to nurse well and the stools showed signs of indigestion. She breathed with effort. Examination of the lungs showed only a weakened respiratory murmur. Venous enlargements were noted over the anterior surface of the chest; the cheeks showed some stellate capillary venous enlargements and the larger veins about the eyes and on the temples were noticeably full and clearly marked. The evidences of intrathoracic pressure gradually became more distinct. An irregular fever appeared. Digestive disturbances became more marked. Cyanosis of the fingers and hands was constantly present in some degree. Death ensued one month later, the child being then four months old. At the necropsy both lungs were found thickly studded with miliary tubercles. At the root of the lungs, in such a position as to press on the trachea to some degree, but more particularly on the descending cava, was a mass of tuberculous glands the size of a pigeon's egg, the center one of which had broken down and contained about 20 minims of purulent fluid. A few scattered tubercles were found in the spleen. The other organs were not affected.

In discussing the possible origin of the infection in this case the mother stated that at the time of her confinement at the hospital a patient was dying of pulmonary tuberculosis in a room across the hall from her room. The fact that the child was only two months old and that the large bronchial gland showed advanced disease makes it certain that the original infection must have occurred soon after birth by inspiration.

Archives of Pediatrics, New York.

August.

29 *Multiple Rhabdomyoma of the Heart Muscle. J. H. M. Knox, Jr., and E. H. Schorer, Baltimore.
30 Etiology and Diagnosis of Tubercular Spondylitis in Infancy and Childhood with Fatal Coma Following the Administration of Alcohol, Chloroform and Ether Anesthesia for Diagnostic Purposes. J. H. Hess, Chicago.
31 Osteogenesis Imperfecta. E. D. Fenner, New Orleans.
32 *Case Simulating Peptic Ulcer. S. S. Adams, Washington, D. C.
33 Case of Acute Suppurative Thyroiditis, with Pressure Symptoms Relieved by Intubation. F. S. Meara and R. S. MacGregor, New York.
34 Further Observations on Citrate of Soda. J. W. Van Derslice, Chicago.

29. Multiple Rhabdomyoma of Heart Muscle.—The patient from whom Knox and Schorer obtained this specimen was only 7 months old. The tumors were situated in the myocardium and in the right and left ventricle, the latter being pedunculated.

32. Case Simulating Peptic Ulcer.—Adams reports the case of a girl, 11 years of age, who complained of a sudden severe pain in her stomach and soon vomited blood in large quantities. She vomited blood several times that day and incessant hiccough followed. Pain was less atter vomiting, but persisted, and the abdomen remained very tender to touch. The patient did not vomit again, although slight nausea was present. A probable diagnosis of peptic ulcer was made, but Adams was of the opinion that the blood did not come from the stomach. The uvula of the patient was adherent to the right tonsil. Adams separated this adhesion after the patient had vomited the blood without exciting any bleeding. He inclined to the belief that the vomited blood came from the irritated fauces by a voluntary effort resembling hiccough. The clinical findings were opposed to the original diagnosis.

Montreal Medical Journal.

August.

35 *Case of Carcinoma of the Upper End of the Esophagus, with Perforation into the Trachea. J. Bell and J. McCrae, Montreal.
36 *Three Cases of Typhoid Fever with Unusual Complications. W. A. Molson and A. H. Gordon, Montreal.
37 Cerebral Tumor Simulating a Vascular Lesion. F. G. Finley, Montreal.
38 Malaria and Its Transmission. S. McGibbon, Forest, Ontario.
39 Case of Epidemic Meningitis of Twenty Hours' Duration. J. McCrae, Montreal.
40 Osteomalacia Associated with Lipemia. O. Klotz, Montreal.
41 Cerebral Complications Secondary to Nasal Disease. R. H. Craig, Montreal.

35. Carcinoma of Esophagus with Perforation into Trachea.—In the case reported by Bell and McCrae, a woman, aged 32, the tumor was situated in the upper part of the esophagus. Death ensued as the result of a bilateral aspiration pneumonia with abscess and gangrene of the lung.

36. Typhoid with Unusual Complications.—The three cases reported by Molson and Gordon presented features of blood destruction and were accompanied by convulsive seizures. One of the patients also had multiple subcutaneous hemorrhages.

American Medicine, York, Pa.

August.

42 *Influence of Rest, Exercise and Sleep on Gastric Digestion. J. Friedenwald, Baltimore, Md.
43 Pernicious Effects of Alternating Currents of High Voltage. F. H. Millener, Buffalo, N. Y.
44 *Intestine Surgically Considered with Special Reference to Its Sterilization. A New Open Method for Lateral Anastomosis. S. E. Sanderson, Detroit, Mich.
45 Typhoid Fever; Round Worms; Cholecystitis; Cholangitis: Hepatic Abscesses. C. W. Sharples, Seattle, Wash.
46 Mastoid Operations. T. H. Shastid, Marion, Ill.
47 Multiple Chancre. A. F. Büchler, New York.
48 Treatment of Cancer of Breast. B. MacMonagle, San Francisco, Cal.

42. Influence of Rest, Exercise and Sleep on Gastric Digestion.—As the result of a number of carefully conducted experiments Friedenwald arrives at the following conclusions: 1. In persons with normal digestive powers it makes but little difference whether the individuals rest, exercise or sleep after meals; though after violent exercise or sleep the gastric digestion is very slightly impaired. 2. In patients suffering with superacidity and subacidity it is best to order rest after meals; after violent exercise or during sleep the digestion is impaired in these cases. 3. In patients suffering with motor disturbances of the stomach, it is best to prescribe moderate exercise after meals, for rest, violent exercise or sleep disturbs the digestion under these conditions.

44. Lateral Anastomosis of Intestine.—Sanderson's method in some respects copies Connell's method. An opening is freely made into the lumen of the guy at both points where the anastomosis is desired. This opening may be linear or oval and should be large enough to equal, if not exceed, the lumen of the guy. A guy suture of silk or silkworm is passed in to hold the ends of the opening in approximation, two sutures being necessary. Beginning near one the bowels are sewed together from the mucous membrane side approximating the serous coats. The suture employed is a continuous right angle through-and-through suture, all work being done within the lumen of the intestine. Reaching the other guy suture, a knot is tied in the running suture and the guy suture is removed. The running suture is continued around to the starting point, as in the Connell method. The suture material to be used may be silk or catgut.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.

September.

49 Importance of the Prevention of Infectious Diseases in the Navy, with a Suggestion as to the Prophylactic Treatment of Some of the Acute Exanthemata. H. G. Beyer, U. S. N.
50 *Treatment of Gonorrhea by Irrigation. W. G. Miller, U. S. Army.
51 Gonorrhea—Its Treatment from the Standpoint of a Military Surgeon. R. M. Thornburgh, U. S. Army.
52 Question of the Origin of the Lues Venerea Among the Conquistadores in Mexico. H. du Rest Phelan, U. S. Army.
53 Suggestion for the Greater Efficiency of the Organized Militia C. S. Butler, Boston.
54 Calx Sulphurata U. S. P. as a Preventive of Yellow Fever. W. F. Waugh, U. S. N.
55 Otitis Media and Mastoiditis as a Sequel of Influenza. C. D. Center, Quincy, Ill.
56 *Treatment of Fractured Ribs. R. M. Woodward, P. H. and M.-H. S. of U. S.
57 An Emergency Case for Field Service. L. B. Almy, U. S. Army.
58 *A New First Aid Packet. W. M. Angney, Philadelphia.
59 Method of Artificial Feeding of Infants in the Tropics. L. T. Lewald, U. S. Army.

60 Personal Experience with Spinal Analgesia, and Its Application to Military Surgery. H. D. Thomason, U. S. Army.
61 Liver Abscess, with Special Reference to the Etiological Importance of Ascaris Lumbricoides. J. F. Leys, U. S. N.
62 *Peculiar Case of Appendicitis. W. N. Bispham, U. S. Army.

August.

63 Medico-Military Notes in Manchuria. J. V. Hoff, U. S. A.
63½ Status of the Hospital Ship in War. J. C. Wise, U. S. N.
64 Gunshot Wounds of the Abdomen. G. T. Vaughan, U. S. P. H. and M.-H. S.
65 Roll of Honor for 1904-05. Capt. S. C. Stanton, Chicago.
66 X-Ray in Military Surgery. H. H. Hartung.

50. Treatment of Gonorrhea by Irrigation.—Miller employs Valentine's method, except that during the first three days, when the urethra is highly inflamed and very sensitive, he uses only warm sterile water, which thoroughly cleanses the urethra and also allays the inflammation. After the mucosa becomes less swollen the germicide, which is then used, is more effective.

56. Treatment of Fractured Ribs.—After determining the nature of the fracture, Woodward scrubs the skin with alcohol or ether to remove all the oily material. The chest is then immobilized by strips of plaster. The plaster which he has found best for the purpose is that known to the trade as Z O plaster. The width of the strips to be employed varies according to the obesity or the reverse of the patient, but as a rule strips two inches wide are used. One of these is measured around the patient and cut of a length to reach from a point one inch beyond the mid-sternal line to a point one inch beyond the mid-spinal line. The other strips are cut the same length, about twelve pieces being necessary. The first strip of plaster is applied parallel to the ribs, i. e., from in front backward and upward, but is placed well below the point of fracture, in some cases nearly as low as the crest of the ilium. The front end is attached first, and then while making considerable tension on the strip, it is carefully and smoothly applied upward and backward to a point just beyond the spine. The second strip is attached in front at a point level with the nipple, and is passed downward and backward to a point in the lumbar region. The third strip follows the direction of the first, overlapping its upper half. The fourth overlaps the second, etc. The line of overlapping should fall directly over the seat of fracture. When completed, the chest should be strapped from a point slightly above the ilium to a point well into the axilla. A four-inch gauze bandage is now evenly applied over the entire chest and abdomen. This makes a soft lining for the starch jacket, which is next applied.

Crinoline used for starch bandages is of different qualities, and it is not always the most expensive crinoline which is the best for the surgeon's purpose. The most suitable quality is saturated with starch. It should be made into bandages four or five inches wide, not rolled too tightly. These bandages should be immersed in tepid water a few moments, but should not be squeezed much, as this wastes the starch. They are then applied over the gauze bandages, and like them form a jacket over the entire chest and abdomen. The crinoline should not be applied with much tension, as it shrinks in drying, and may prove too tight. If the crinoline is of proper quality each layer will agglutinate itself to the one underneath and the edges of the bandage will not curl up. Two safety pins in the end of the bandage are all that is necessary. To hold the jacket in its original position, Woodward makes suspenders by passing a three-inch muslin bandage over each shoulder, the ends meeting low down in front and behind. These are attached to the starch jacket by a series of safety pins. The patient is now placed on his back in bed until the jacket dries, when it will be found straight and smooth, and in this condition it will remain indefinitely. The jacket is not heavy or uncomfortable, and immediately on its application the patient feels a sense of security in taking a long breath without the fear of the sharp pain which he had before.

58. New First Aid Packet.—The dressing which Angney has adopted consists of two compresses, each three by three and one-half inches of gauze with absorbent cotton in the center; one is tacked permanently on the bandage; the other is placed loosely on the top of the first compress, and overlying the second compress are a few layers of loose gauze which can be used by a physician for tamponage. The compresses are dusted with boro-salicylic acid. When one wound is present, the double pad can be placed on it; if two are present or if the wound be a long one, then the compresses can be separated and placed in position. There is sufficient bandage to wrap around the leg in its widest diameter or for use around the trunk. The end of the bandage is split, which is a satisfactory method of fixing it in position. Two strips of adhesive plaster are added.

62. Peculiar Case of Appendicitis.—The subject of Bispham's report complained of severe pain in the back just below the articulation of the twelfth rib and spine on the right side, one inch from the column. The abdomen was not distended and there was no pain on palpation, except at the point mentioned where there was also some swelling, but no redness. He vomited only when food was taken. His bowels had not moved for several days. Acting on the supposition that there was pus somewhere beneath the localized area in the back, Bispham made a linear incision parallel to the spinal column and directly over the area of swelling and tenderness. A small hematoma was found, about the size of a pigeon's egg, in the latissimus dorsi muscle. This muscle was cut through, and the liver, kidney, colon and pelvis were examined carefully. Everything seemed to be normal, however, with no adhesions or exudates of any kind. The wound was closed and dressed. For the next few days the temperature went up and there appeared some tympanites with pain and tenderness over the right side of the abdomen. Owing to the patient's poor condition, no further operative procedure was undertaken until the third day, when the old incision was opened and several pus cavities were found in the muscular tissue of the back, next to the peritoneum. Further exploration revealed a perforation of the tip of the appendix and a localized peritonitis. There was also a small ulcerated hole through the peritoneum just beneath the appendix which communicated with the cavities in the back. The patient died shortly after the operation.

Ophthalmology, Milwaukee, Wis.

July.

67 Ocular Injuries from Glass and Stone. W. M. Sweet, Philadelphia.
68 Observations on Worth's Methods of Treatment of Convergent Squint in Young Children, with Presentation of Cases. L. Emerson, Orange, N. J.
69 Cure of Convergent Strabismus by Orthoptic Treatment at 20 Years of Age. H. V. Würdemann, Milwaukee.
70 A Secure, Looped, Single-Stitched Advancement Suture, with a Consideration of Scleral Anchorage. M. D. Stevenson, Akron, Ohio.
71 Antipyrin Keratitis. M. Inouye, Uchi-Saiwai-Cho, Tokio, Japan.
72 Effects of Full and of Minimum Doses of Atropin Sulphate and of Homatropin Hydrobromate. L. Howe, Buffalo.
73 Ophthalmic Subjects in Talmudic Literature. A. Brav, Philadelphia.
74 Monocular Visible Spasm of the Central Artery of the Retina. D. F. Harbridge, Philadelphia.

Journal of Nervous and Mental Disease, New York.

August.

75 Public Obligations of the Neurologist. H. R. Stedman, Boston.
76 Carcinoma of the Nervous System. W. G. Spiller and T. H. Weisenburg, Philadelphia.
77 Temporary Disappearance of the Sensory Symptoms in Syringomyelia. C. W. Burr, Philadelphia.
78 Sphincter Reflexes in Tabes Dorsalis and Paresis. C. F. Martin, Philadelphia.

Journal of the Kansas Medical Society, Lawrence.

August.

79 Prophylaxis of Typhoid with the Influence of the Soil, Fabrics and Flies in Its Dissemination. J. E. Foltz, Hutchinson.
80 Medical Organization. J. Dillon, Eureka.
81 Suggestion in the Treatment of Certain Psychoses. W. D. Toby, Salina.

St. Paul Medical Journal.

August.

82 Surgical Affections of the Patella. G. Schwyzer, Minneapolis.
83 Etiology and Pathology of Gallstone Disease. W. Lerche, St. Paul, Minn.
84 Diagnosis of Gallstones. J. Goodrich, St. Paul, Minn.
85 Surgical Treatment of the Gall Bladder and Bile Passages. J. T. Rogers, St. Paul, Minn.
86 Some General Considerations in the Treatment of Fractures by the Country Practitioner. Emil King, Fulda, Minn.
87 The Toxemia of Pregnancy. F. Leavitt, St. Paul Minn.

Medical Fortnightly, St. Louis.

August 10.

88 Cough—Extrapulmonary Causes of Cough, in Consequence of Pathologic Changes in the Upper Respiratory Tract, and Disturbances in the Function Thereof. J. C. Buckwalter, St. Louis.

89 Two Cases of Cancer Treated with Trypsin Infections and Lotio Pancreatitis Locally. R. H. Davis, St. Louis.
90 Senile Arteriosclerosis. G. E. Rosenthal. Quincy, Ill.
91 Case of Aneurism of the Thoracic Aorta with Ulcer of the Esophagus and Perigastritis. W. H. Rush, St. Louis.

Brooklyn Medical Journal.

August.

92 Stomach as an Etiologic Factor in Disease. C. B. Bacon, Brooklyn.
93 Surgical Treatment of Obstinate Dyspepsia. W. F. Campbell, Brooklyn.
94 Significance of Albuminuria from the Insurance Standpoint. G. H. Pierce, Brooklyn.

Indiana Medical Journal, Indianapolis.

August.

95 Injuries to the Brain, Diagnosis and Treatment. C. E. Cottingham, Indianapolis.
96 How Progress Comes in Medicine. F. C. Shattuck, Boston.
97 Science and Art of Fitting Glasses. E. Davis, New York.

Interstate Medical Journal, St. Louis.

August.

98 Primary Retroperitoneal Sarcoma. J. C. Munro, Boston.
99 Injuries to the Diaphragm. W. C. G. Kirchner, St. Louis.

Journal of the Outdoor Life, Saranac Lake, N. Y.

August.

100 *Sanatorium and Its Mission.* A. J. Richer, Montreal.
101 Rest vs. Passive Exercise. J. T. Rothrock, Mont Alto, Pa.
102 Hints and Helps to Tuberculous Patients. C. L. Minor, Asheville, N. C.
103 Treatment of Pulmonary Tuberculosis. G. W. Goler, Rochester, N. Y.

Canadian Practitioner and Review, Toronto.

August.

104 Gastroptosis. G. Chambers, Toronto.

Journal Missouri State Medical Association, St. Louis.

August.

105 Anterior Vaginal Coeliotomy Incision. O. B. Campbell, St. Joseph.
106 Nervous System of the Child in Relation to Its Development. S. P. Child, Kansas City.
107 Apparent Cervical Menstruation. T. C. Witherspoon, St. Louis.

Journal of the Michigan State Medical Society, Detroit.

August.

108 Rural City Milk Supplies—Their Relation to Infant Feeding—Home Modification Versus Laboratory Feeding. A. M. Cook and D. M. Cowie, Ann Arbor.
109 Clinical Examination of the Infant's Stool. H. M. Rich, Detroit.
110 Use of Local Anesthesia in the Treatment of Rectal and Anal Disease. L. J. Hirschman, Detroit.
111 Medical Inspection of Schools. E. K. Herdman, Ann Arbor.

American Practitioner and News, Louisville, Ky.

August.

112 Proper Preparation of Plaster-of-Paris Casts in Treatment of Fractures of the Extremities. G. W. Griffiths, Louisville.
113 Thoughts on Uremia. C. P. Fox, Greenville, Tenn.
114 Temperature 92.8° Following Fracture of the Skull. W. O. Humphrey, Louisville.
115 Maternal Impression Superstition, and Why It Survives. E. T Shelly, Atchison, Kan.

Medical Examiner and Practitioner, New York.

August.

116 Diseases of the Heart. Diagnosis, Prognosis. J. Nevins, Jersey City.
117 Recognition and Importance of Chronic Myocardial Disease. C. S. Williamson, Chicago.
118 Cardio-Vascular System from an Insurance Standpoint. W. F. Boggess, Louisville, Ky.
119 Heredity as a Factor in Life Expectancy. J. M. French, Milford, Mass.
120 Two Factors in Life Insurance; Medical and Family Histories of the Applicant. W. W. Pennell, Mt. Vernon, Ohio.
121 *Dangers of the Potters' Trade from the Life Insurance Standpoint.* H. G. Norton, Trenton, N. J.
122 Treatment of Dysmenorrhea. M. Jacoby, Mannheim, Germany.

Virginia Medical Semi-Monthly, Richmond.

August 24.

123 Consideration of Serious Surgical Emergencies. J. A. Day, Jacksonville, Ill.
124 Treatment of Placenta Prævia by Cesarean Section. A. P. Condon, Omaha, Neb.
125 Wandering Parasitic or Aberrant Retroperitoneal Uterine Fibromata. I. S. Stone, Washington, D. C.
126 Preliminary Tracheotomy to Operations About the Tongue and Pharynx. B. G. Copeland, Birmingham, Ala.
127 Arsenicum. H. B. Miller, Lincoln, Neb.

Journal of the South Carolina Medical Association, Greenville.

August 21.

128 Management of Acute Diffuse Septic Peritonitis. Le G. Guerry, Columbia.
129 Scarlet Fever. W. L. Kirkpatrick, Pacolet.
129½ Diagnosis of Obstructive and Nerve Deafness and Classification of Each. L. O. Mauldin.
130 Mountain Sickness as Observed in the Andes. F. A. Coward. La Paz, Bolivia.
131 Negroes and Malaria. R. Wilson, Jr., Charleston.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

August 15.

132 Surgical Opportunity. C. H. Mayo, Rochester.
133 Retroperitoneal Sarcoma. W. D. Shelden and J. F. Corbett. Minneapolis.
134 *Acute Gonorrhea in the Male.* F. R. Wright, Minneapolis.
135 Microscope in Diagnosis. J. J. Catlin, Buffalo, Minn.

FOREIGN.

British Medical Journal.

August 18.

1 *Pulmonary Edema. F. J. Wethered.
2 *Acute Nephritis (Morbus Brightii). A. G. Gullan.
3 *Food and Food Preservatives. R. Jones.
4 Direct Examination of Esophagus and Upper Air Passages. D. R. Paterson.
5 *Human and Bovine Tuberculosis. N. Raw.
6 Case of Sudden Death Possibly Due to Vagus Inhibition. E. D. Telford.
6½ *Bacterial Action of Compounds of Silver. C. R. Marshall and F. F. M. Neave.

1. **Pulmonary Edema.**—Wethered discusses the clinical history of this condition, with special reference to its causes.

2. **Acute Nephritis.**—In this paper Gullan takes up parti larly the treatment of nephritis. To produce a free diaphore he prescribes the follownig mixture:

Tincture of jaborandi	m. xxx	2
Sodium benzoate	gr. xv	1
Chloroform water	℥i	30

M. Sig.: One ounce every four hours.

3. **Food and Food Preservatives.**—Jones' paper is based on the report of the London departmental committee on food preservatives made in 1901 and is largely a review of what has been published before.

5. **Human and Bovine Tuberculosis.**—Raw reiterates his previously expressed views on this subject, namely, that human and bovine tuberculosis are distinct varieties of disease, but that the human body is susceptible to both, and especially to bovine tuberculosis in the milk-drinking period of life. He is at present collecting the blood of animals, killed for tuberculosis, the serum of which, after careful preparation, he proposes to use in vaccinating children whose parents died of phthisis, with a view to protecting them against that disease.

6½. **Bactericidal Action of Compounds of Silver.**—An important investigation was recently undertaken under the authority of the therapeutic committee of the British Medical Association by C. R. Marshall and E. F. Macleod Neave to determine the comparative value of the various compounds of silver as bactericides and antiseptics. The following preparations were examined:

	Percentage of silver.
Collargol	86.6
Silver fluoride	81.7
Silver nitrate	63.6
Itrol	60.8
Actol	51.5
Argentol	31.2
Ichthargan	27.1
Argyrol	20.0
Albargin	13.4
Nargol	9.6
Largin	9.4
Novargan	7.9
Protargol	7.4
Argentamine	6.4
Argonin	3.8

The solutions for experiment were made each to contain a definite percentage of silver so that comparisons are made between strengths of the different preparations containing equal percentages of silver. Bactericidal power was determined by noting the percentage of silver necessary to destroy organisms in a mixed culture obtained by allowing uncooked beef to stand in water in an open vessel for four to six weeks. Experiments were also made with a pure culture of *Staphylococcus pyogenes aureus*. The antiseptic action was tested (1) by observing the time taken by minced cooked beef to putrefy in presence of solutions of silver compounds of known strength, (2) by inoculating an agar medium containing a definite quantity of the various silver compounds. The power of diffusion of the various compounds was tested by immersing glass tubes filled with coagulated agar and inoculated with *Staphylococcus pyogenes aureus* in solutions of the various silver preparations and observing the distance to which the silver penetrated, as shown by visible discoloration and also by the antiseptic action. Argyrol excelled the other preparations in diffusion power.

The authors conclude with the following summary: The experiments show that as regards bactericidal action the various silver compounds investigated fall into three groups: 1, Those which are powerfully bactericidal; 2, one—nargol—much less powerfully bactericidal; 3, two—argyrol and collargol—which possess practically no bactericidal action whatever. The first group includes most of the substances investigated, namely, silver nitrate, silver fluorid, actol, itrol, argentamin, argentol, albargin, argonin, ichthargan, largin, novargan and protargol. The bactericidal action of these in solutions containing the same percentage of combined silver is closely similar, and it is practically impossible to place them in any order of activity which would be true under all circumstances. As argyrol and collargol are not bactericidal, it is evident that the amount of silver which a compound may contain is no criterion of its bactericidal power. Moreover, in view of the results obtained with argyrol, it seems impossible to attribute the good effects which many clinicians have obtained with it to its bactericidal action.

The Lancet, London.

August 18.

7 *Treatment of Cancer of the Stomach. A. W. M. Robson.
8 Public Supply of Pure or Specially Prepared Milk for the Feeding of Infants. C. F. McCleary.
9 Infantile Mortality and the Employment of Married Women in Factory Labor Before and After Confinement. G. Reid.
10 *Increase of the Power of Local Authorities with Regard to Milk Supply. A. K. Chalmers.
11 *Sterilization of Tuberculous Sputum and Articles Infected by the Tubercle Bacillus. T. Kirklaud and M. S. Paterson.
12 Observations on the Life History of Leucocytes. C. E. Walker.
13 Acute Lobar Pneumonia in a Pygmy. W. H. Gregory.
14 Internal Secretion and the Ductless Glands. S. Vincent.
15 Frictional Electricity: A Factor in Caisson Disease. G. W. F. MacNaughton.
16 *Observations on the Action of Strontium Salts on the Coagulability of the Blood. J. B. Nias.
17 Note on the Structure of Spirochæta Duttoni. J. W. W. Stephens.

7. **Cancer of Stomach.**—Robson emphasizes the importance of an early diagnosis of cancer of the stomach in order that a radical operation may be performed at the earliest possible moment. If necessary, an exploratory operation should be done, even in cases where the disease is advanced and a tumor is perceptible. When the disease is too extensive for any radical operation to be done, the palliative operation of gastroenterostomy is indicated. It can be done with very small risk and may considerably prolong life. Robson has found that some cases, thought to be cancer, too extensive for removal, have cleared up after a gastroenterostomy, the patient getting quite well. In cases of disease of the cardiac end of the stomach too extensive for removal, the operation of gastrostomy may considerably prolong life and prove of great comfort to the patient by preventing death from starvation. Even where the disease is too extensive either for removal or for a gastroenterostomy, the operation of jejunostomy may prove of service to the patient. Where a radical operation can be performed, the thorough removal of the disease may bring about as much relief to the patient as does the operation for the removal of cancer of the breast, uterus, and other organs of the body. In some cases a complete cure may follow.

10. **Improved Milk Supply.**—The object of Chalmer's paper is to consider what alteration in existing legislation seems to be necessary to enable local authorities to insure the provision of a pure milk supply in the city of Glasgow.

11. **Sterilization of Tuberculous Sputum.**—Kirkland and Paterson describe the method employed at the Brompton Hospital. To sterilize sputum an iron vessel is used which is provided with a movable lid and which has at the bottom two steam jets so arranged that a circular motion is given to the contents. The sputum having been poured into this vessel, the lid is screwed down and steam is allowed to enter until a pressure of 15 pounds has been obtained. The contained sputum is allowed to boil under the action of steam for a period of 20 minutes, after which it is allowed to cool to a temperature somewhat above 100 F. and is emptied into the drain by opening a valve in the bottom of the sterilizer arranged so that all the contents can drain away. For cleaning the sputum pots they employ a large iron tank having the necessary valves for admitting water and steam and a valve in the bottom of the tank through which the contents could be emptied into the drain. Inside the tank is a cage which can be raised out of or lowered into, the tank at will. This cage is constructed of brass tubes framed and braced together. On the horizontal tubes the sputum cups are suspended by their handles and the covers of the cups are placed in suitable trays provided in the cage. For the purposes of sterilization and cleaning, the cage full of soiled sputum cups and covers is lowered into the tank. Water is admitted into the tank and boiled by the admission of steam. After boiling for 20 minutes this water is emptied and the process is repeated. The cage is then raised and the cups and covers are removed. By this method much less handling of the cups is required and the cleaning of both cups and covers is found to be more thoroughly performed than when washed by hand. The saving of time effected by this method of washing the cups enables the same staff as was formerly employed in collecting and washing the cups to wash the handkerchiefs in addition. The soiled handkerchiefs are conveyed from the wards in covered pails and are at once placed in the sterilizing and washing machine, where they are first sterilized and afterwards washed. After washing they are taken out and placed in the hydro, which, with the calender, is in a separate room. After being dried in the hydro they are passed through the calender and are then folded and returned to the wards.

16. **Action of Strontium Salts on Coagulability of Blood.**—From personal experiments Nias is convinced that the lactates of strontium and magnesium, in doses of from 1 to 2 grams, are serviceable substitutes for the salts of calcium when the latter are not absorbed from the alimentary canal.

Journal of the Royal Army Medical Corps, London.

August.

18 Prevalence of Mediterranean Fever Among British Troops in Malta, 1905 (To be Continued). A. M. Davies.
19 Health of the Soldier; With Special Reference to Preventable Diseases. H. J. Barratt.
20 *Rapid and Practical Method of Diagnosing Typhoid Fever. L. W. Harrison.
21 *Rider's Sprain. P. G. Levers.
22 Removal of Wounded in Hill Warfare; A Method Lately Introduced into Practice in the 30th Punjabis. W. W. Jeudwine.
23 Inspection of Tinned Foods. W. W. O. Beveridge.
24 South African Stock Diseases. D. Bruce.
25 Internal Anatomy of Stomoxys. F. M. G. Tulloch.
26 Hints Regarding the Management and Use of X-Ray Apparatus (To be continued). F. Bruce.

20. **Diagnosis of Typhoid.**—Harrison suggests the routine examination of the blood by culture as a rapid means of diagnosing typhoid fever. The method should be applied to every case of fever. The method employed is as follows: The patient's arm, at the bend of the elbow, is cleaned with soap and water, turpentine, 1 in 1,000 solution of perchlorid in rectified spirit, and ether rubbed on; ether is then dropped on from a drop bottle every few seconds till the puncture is made. The vein is made prominent, as for venesection. During this time an antitoxin syringe of 10 c.c. capacity is being sterilized by filling with oil at 160 C. As soon as the syringe has cooled down to the temperature of the hand, the needle is given a final dip in the oil to destroy any germs which might have fallen on its point during the cooling of the syringe barrel; and is then, almost at once, run into the vein. The puncture of the vein is very simple; the needle is kept almost parallel with the vein, the point is run through the skin and pushed steadily on; the eye of the needle should look upward and the point is bound to enter the vein. The syringe is filled by withdrawal of the piston and the needle withdrawn from the vein. A flask of 500 c.c. of broth is opened in the usual manner, and after expressing a few drops of the blood to wash off any germs which might have fallen on the eye of the needle during the

necessary interval between withdrawal of the needle and opening of the flask, the whole of the 10 c.c. of blood is forced into the broth and the flask replugged. The flask of broth with the patient's blood is then put into an incubator and kept at a temperature of 37 C. In a successful result, after 20 hours, the broth is often found to be turbid, particularly if the culture is made early before agglutinins and bactericidal substances have developed in the blood. A loopful of the turbid broth is put out on a slide, covered with a slip, and examined with an eighth-inch objective. If motile bacilli are seen, a portion of antityphoid serum, of which the maximum agglutinating power has previously been ascertained, is suitably diluted with distilled water, a loopful of the diluted serum placed at the edge of the slip, and the effect watched. If agglutination occurs, one is in possession of the information that a patient admitted with fever has a motile bacillus circulating in his blood, which bacillus is agglutinated by a suitable dilution of antityphoid serum.

21. **Rider's Sprain.**—Ievers insists that rider's sprain deserves a most careful study, both as to its causation and treatment. The muscle engaged is not what is sometimes erroneously called the "tailor's muscle," but the adductor longus, which may be affected to any extent, varying from a slight sprain to more or less complete rupture of the muscle and its sheath or tendon. In severe cases the point usually torn is at its insertion into the rami of the pubes. The sheath of the muscle may be completely severed in addition to its tension, and the belly of the muscle forming a large tumor in the upper or inner third of the thigh; more often than not it is in the right thigh that the muscle gives way, and when there is much laceration one often finds very extensive ecchymosis extending in all directions from the part immediately implicated. The cause is usually owing to the extra effort occasioned in keeping one's seat, either in taking a fence, when the horse happens to peck badly, or when in jumping a high wall the horse unexpectedly attempts to change, thereby causing the rider a sudden jar, the extra strain being sufficient to cause the muscle to give way. In the treatment, Ievers advocates a somewhat similar procedure to that of a fractured bone. He has, therefore, advised an appliance for this purpose, formed of the stoutest elastic band made, which should be five inches in width, stiffened by a couple of slips of whalebone let in at intervals, and cut so as to envelop in its circumference the upper portion of the thigh, taking care that the opposite ends do not approximate by two and one-half inches, so as to admit of the required stretch to get a good grip when fastened by means of three straps and double or whole buckles on outer aspects of thigh. Further, it is essential that the upper edge of band be brought right up to the fork. A suitable pad should be inserted inside the elastic band over the seat of injury, and finally a soft leather strap, similar to a bridle rein, should be attached to a stud or buckle on upper and outer edge of appliance, then brought round the body and crossed so as to form a figure-of-eight over hip of side affected, and also fastened to a separate buckle attached to elastic band. By this means the great drawback of most appliances, i. e., the tendency to slip down, is effectually prevented. With this appliance on, the patient is made quite comfortable and could almost at once commence riding.

The Dublin Journal of Medical Science.

July, 1906.

27 *Further Series of Enucleations of the Prostate. Sir William Thomson.
28 Notes on the Training of the Voice. H. Law.
29 Treatment of Eustachian Deafness. A. Cresswell and G. Cresswell.

27. **Enucleation of Prostate.**—Thomson reports on 18 cases in which the prostate was removed by the suprapubic method. The ages of the patients varied from 53 to 76. There were five deaths in this series. One was due to ether bronchitis and occurred in a patient 75 years old, who also suffered from mitral disease. Another man died 14 days after operation from a suddenly developed peritonitis. The third death was due to sepsis and occurred within 24 hours. Another patient died 12 weeks after operation from gangrene of the right lung. The last death was due to a pelvic cellulitis.

Presse Médicale, Paris.

30 (XIV. No. 62) La présence de colloides dans l'eau de boisson de Paris et dans les eaux *minérales* (in drinking water). H. Iscovesco.
31 Le radium au point de vue physiologique et thérapeutique. H. Dominici.
32 *Les torticolis d' origine otique. R. Leroux.
33 (No. 63). Traitement des broncho-pneumonies graves par les abcès de fixation. P. Dalreaux.
34 *Radioscopic Study of Infant's Stomach. L'estomac du nourrisson. Forme; limite inférieure; mode de remplissage et d' évacuation. G. Leven and G. Barret.
35 *Spoons.—Cuillers. A. Martinet.

32. **Wryneck from Otitis.**—Leroux reviews the history of torticollis resulting from some lesion in the ear or complications, since Gellé first called attention, in 1894, to its possibility. In many cases the torticollis is due to neuritis of the spinal accessory nerve, as he had occasion personally to observe in 2 patients. After a suppurative otitis, the sterno-cleido-mastoid and trapezius muscles showed signs of paralysis and atrophy. In tests in which wax was injected in the cadaver at the points where pus usually presents in a suppurative process in the ear, the spinal accessory nerve was always found encircled by the wax, showing the almost unavoidable involvement of this nerve in such a process. If examination fails to reveal signs of mastoid or glandular suppuration, thrombophlebitis of the jugular vein may be suspected, as the spinal accessory nerve almost forms part of the wall of this vein, or the torticollis may be traced to meningitis. In the absence of signs of any of the above, examination of the blood may reveal latent suppuration or an extradural abscess. When the torticollis is the only symptom observed, it suggests that the nerve is involved only in its cervical portion, and only the external branch. Laryngeal disturbances are liable when both branches are involved. In some cases the patient becomes deaf after or during torticollis without ever exhibiting any symptoms pointing to the ear. In others there are no ear symptoms, but suddenly violent cerebral symptoms follow the torticollis. In every case of wryneck careful examination should be made of the ear.

34. **Radioscopy of Infant's Stomach.**—Among the interesting findings reported was the lack of any time difference between the emptying of the stomach after ingestion of breast milk and of diluted cow's milk. The evacuation proceeds progressively, and with quantities between 80 and 175 c.c., requires from an hour and three-quarters to two hours before it is completed.

35. **Spoons for Medicines.**—Martinet suggests various ways in which physicians can be sure that their patients are getting uniform doses of medicine. Spoons vary widely in size and capacity and cause irregular dosage. A good remedy would be to prescribe only the amount needed for the 24 hours, to be taken in four portions. Graduated medicine glasses, he says, are inaccurate, for mechanical reasons, which he cites. He accepts as the best remedy the use of an inexpensive semi-spherical spoon, 3.82 cm. in diameter, to hold 15 c.c., the handle straight, the spoon to be made of aluminum or something of the kind, and to be presented by the druggist with each filled prescription.

Revue de Chirurgie, Paris.

Last indexed, page 156.

36 (XXVI. No. 7). *Le traitement chirurgical des anévrysmes de l'artère sous-clavière. M. Savariaud.
37 Déformation de l'epine de l'omoplate (scapula). C. Féré.
38 *Des fistules gastro-cutanées. M. Patel and R. Leriche.
39 Amputation osteoplastique femoro-tibiale (dite de Sabancieff). Etude cadavérique. L. Chevrier.
40 L'énucléation incomplète du-scaphoide. C. Capillery and M. Ferron.
41 *Technique opératoire de la pyloro-gastrectomie pour cancer. R. Leriche.
42 (No .8). *Des luxations du poignet compliquées d'issue des os (dislocations of the wrist complicated by protrusion of bones). Couteaud.
43 *Résection totale des saphènes dans le traitement des varices superficielles des membres inférieurs. Terrier and Alglave.
44 *Contribution à l'étude du cancer du rectum. Son traitement. (Continued). Martin du Pan.

36. **Aneurism of the Subclavian Artery.**—Savariaud reviews the results of operative treatment of aneurism of the subclavian artery during the last 20 years. Treatment differs as the aneurism is exclusively outside of the scalenus muscle, or partly inside and partly outside. In the latter case surgical

measures are too dangerous, as the ligature would have to be applied so close to the heart. The Brasdor technic of peripheral ligature, above and below the aneurism, is preferable. The mortality is nearly zero, while the remote results are often surprisingly excellent. Nine cases in which this treatment was applied all resulted in an operative cure, without any mishap. In 22 cases of extrascalenic aneurism, treated by incision, extirpation or ligature of the second or third part, there was only a single death for which the operation was in any way responsible. In 20 cases of extrascalenic and intrascalenic aneurism there were only 9 operative cures, with 3 recurrences and 8 deaths. Out of the total material of 56 cases in which an operation was attempted, there were 41 operative cures and 10 deaths. Gelatin treatment was unable to effect a permanent cure in the 4 cases in which it was tried. One patient was reported cured by the gelatin, and the case is handed down in the records as cured, although operative treatment was required later, and it figures also as a surgical case. The motor disturbances seemed to be aggravated by the gelatin in Savariaud's own case. Gelatin should be given a trial before surgical measures, without fail, as it certainly is harmless and has quite a number of improvements and cures to its credit. It is especially indicated when operative measures are liable to prove too serious, as, for instance, when the over two-thirds of the subclavian are involved. The details of the various cases are summarized.

38. **Fistulæ Following Gastric Ulcer.**—Patel and Leriche here give the particulars of 6 cases of gastrocutaneous fistula following an ulcer. If the fistula is located high, the discharge from it is intermittent and there is not much disturbance of the general health. Medical measures should be given a thorough trial, and if they fail the best treatment is by resection of the ulcer with suture of the stomach walls. When the fistula is located low, the discharge is practically continuous and the general health soon suffers. Resection and suture are inadmissible, the authors state, for obvious reasons, and palliative operations, such as duodenostomy and jejunostomy, are serious and insufficient. Direct suture should be attempted, although it does not always prove successful.

41. **Pylorogastrectomy for Cancer.**—Leriche gives a detailed description of the technic by which the duodenum is mobilized as a preliminary to resection of the stomach. The various steps of the operation are shown in 8 illustrations.

42. **Dislocation of the Wrist with Protrusion of Bones.**—Couteaud warns against amputation in such cases, as a mutilated hand is worth far more than an artificial one. Resection is better than amputation, and reduction alone is better still. Resection of the dislocated bones of the carpus is necessary, he states, and tardy resection of the bones of the wrist is the last resort. Protracted antiseptic baths are indispensable, with mobilization and massage at the earliest possible moment. Radiograms of patients treated on these principles show excellent healing without ankylosis.

43. **Total Resection of the Saphena.**—The first part of this article by Terrier and Alglave was reviewed on page 156. This part gives the history of 21 cases, with 35 illustrations. The technic includes the total resection of the saphenous veins in treatment of superficial varices and ulcers of the leg and thigh, sometimes of both legs. The results were extremely gratifying.

44. **Cancer of the Rectum.**—Du Pan reviews 123 cases of cancer of the rectum, treated by Kocher between 1873 and 1904. Of this number, 40 proved inoperable and only palliative measures were attempted, but 83 patients were treated by extirpation of the rectum. Kocher does not accept adhesion to the prostate as a true contraindication. About 41.67 per cent. of the patients—a total of 20—have had no signs of recurrence to date, but 5 have succumbed to an intercurrent affection and only 15 are alive at present, some of them 11 years after the operation. His proportion of long survivals is thus 25.75 per cent., while other European surgeons report only from 5 to 18 per cent., with the single exception of Hochenegg, who has 21 surviving out of 84, that is, 25 per cent. Kocher advises as the best technic that which includes fixation of the central stump to the anus with or without invagination in the peripheral stump denuded of its mucosa. The peritoneum should be carefully sutured, not tamponed nor drained. The after-treatment should be extremely solicitous, with constant supervision. At the slightest sign of infection, opening up the wound and irrigating give the best results. He ascribes his freedom from heart failures to the use of ether instead of chloroform. Local recurrence was observed only in 39.7 per cent., generally in the perirectal tissue. Recurrence operated on at once gave excellent results. One of the patients, a woman, is still in good health after fifteen years, although she has been operated on four times for recurrence. Frequent examination is necessary, as recurrences rapidly become inoperable. Metastasis in the liver occurred only by way of the veins, and only when gaping vessels were left into which the cancer cells could then find their way. Hemostasis should be immediate and as complete as possible, avoiding leaving any bone surface in the operative wound. Spontaneous metastasis in the liver was observed only when there had been some complication in the vascular system.

Semaine Médicale, Paris.

45 (XXVI, No. 33.) *Parallelism between Condition of Blood and Condition of Bone Marrow in Pernicious Anemia..—Du parallélisme entre l'état du sang et l'état de la moelle osseuse dans l'anémie pernicieuse. C. Aubertin.
46 *L'hypothermie migraineuse chez les tuberculeux. C. Mantoux.

45. **Parallelism Between the Condition of the Blood and That of the Bone Marrow in Pernicious Anemia.**—Aubertin does not refer to the quantity of the blood, but to its composition, and he states that examination of the blood is an infallible index of the condition of the bone marrow, as he describes in detail.

46. **Migraine and Hypothermia in the Tuberculous.**—Mantoux has had occasion to observe 4 tuberculous patients with attacks of migraine at which times the temperature was subnormal. The tuberculous are extraordinarily sensitive to all causes which send the temperature up or down.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

47 (XXXII, No. 29.) Die Behandlung der Verlagerungen des Uterus (displacements). Schatz. Clinical lecture.
48 *Inflammation of Extradural Tissue of Spinal Cord in Epidemic Cerebrospinal Meningitis.—Pachymeningitis spinalis externa acuta aut cellulitis perispinalis acuta. R. Peters.
49 *Ueber traumatisch-chirurgische Facialislähmungen (paralysis). L. Jacobsohn.
50 *Die Resektion der Nasenscheidewand bei primärer Tuberculose (of nasal septum). A. Onodi.
51 Foreign Bodies in Urethra and Bladder.—Fremdkörper in Harnröhre und Blase. M. Weinrich.
52 Ueber missed labour (missed abortion). M. Plaut.
53 *Ueber Menstruationsfieber, menstruelle Sepsis, und andere während der Menstruation auftretende Krankheiten infektiöser resp., toxischer Natur (menstruation fever, etc.). (Concluded.) G. Riebold.
54 Yeast for Cutaneous Affections.—Ueber Hefebehandlung bei Hautkrankheiten. E. Saalfeld.
55 Nucleated Red Corpuscles.—Ueber kernhaltige rote Blutkörperchen und deren Entwicklung. C. S. Engel.

48. **Inflammation of Extradural tissue in Meningitis.**—Peters discusses this subject from various standpoints and expresses his conviction that the lesions are induced by toxins in the blood. Direct propagation of the lesions is much less probable.

49. **Surgical Traumatism and Facial Paralysis.**—Jacobsohn states that in the 6 cases of traumatic peripheral facial paralysis which he has encountered in the last few years, there was a history of an operation on the head in every instance. Köster has also reported 6 similar histories in 8 cases of traumatic facial paralysis. Jacobsohn reviews the experience of other surgeons in this line, and gives the particulars of 2 cases in which resection of the trigeminus was followed by tardy paralysis. In one case, at least, he thinks that the paralysis might have been avoided by more cautious technic. Harvey Cushing's modification of the Hartley-Krause technic for removal of the Gasserian ganglion he accepts as a great advance, rendering consecutive paralysis much less probable. Better still would be the avoidance of any operation if equally good results can be obtained by stretching the nerve. This should be given a thorough trial. If an operation is considered necessary, the surgeon should endeavor to refrain from cutting the branches of the facial nerve.

50. **Resection of Nasal Septum for Primary Tuberculosis.**—Onodi gives the particulars of a case of extensive primary tuberculous lesion in the nasal septum cured by radical excision. The clinical picture and exploratory excision spoke for cancer and the lesion was removed by opening the nasal cavity in the median line and turning back the soft parts, not attempting endonasal intervention. The patient shows no signs of recurrence or of a tuberculous affection elsewhere to date, more than a year since the intervention.

53. **Menstruation as Source of Infections and Intoxications.**—Riebold has been making a special study of various morbid manifestations liable to accompany menstruation. He regards it as extremely important in the pathogenesis of numerous febrile affections. He thinks that there is no doubt that the menstruating uterus may occasionally prove the source of infection for actual septic affections. Fever accompanying menstruation is by no means uncommon, and is the result of absorption of bacterial toxins or of products of decomposition through the menstruating genitalia. The action of toxins is also evident in the numerous affections of the skin and nerves which may be observed accompanying menstruation, such as erythema, urticaria, herpes zoster and neuralgias. Still more important is the fact that infection or intoxication from the menstruating genital organs is liable to induce various forms of rheumatic affections, including actual polyarthritis and cardiac affections of a rheumatic nature. The course of the acute menstrual articular rheumatism does not differ in any respect from the classic type except, possibly, in its unusual mildness in some cases. In 8 of the 15 cases observed only the joints of the feet were swollen and painful, and the rise in temperature was slight and transient. The heart was not perfectly sound in any of these 15 girls; in all a valvular defect was apparent, quite serious in some. The changes in the heart were severe, out of all proportion to the mildness of the rheumatic involvement of the joints. The experiences related, Riebold thinks, establish the fact that menstrual infection or intoxication of a rheumatic nature may be the insidious and unrecognized origin of a valvular affection. Some typical examples of this febrile menstrual rheumatoid affection and of septic menstrual fever are related in detail. The only source for the staphylococci found in the blood in one case reported must have been the menstruating uterus. As menstruation ceased the symptoms subsided. In such cases there was none of the usual leucocytosis during menstruation. These septic cases are rare but undoubtedly exist and may explain certain cases of "cryptogenic sepsis." Patients who have had two, three or more recurrences of the menstrual rheumatoid affection have been free from them in his experience when the vagina was regularly rinsed twice a day at least with some antiseptic fluid. This is especially necessary when an odor suggests a putrefactive process. Frequent careful cleansing of the external genitals is important in prophylaxis of all these morbid menstrual phenomena.

Gazzetta degli Ospedali, Milan.

Last indexed, page 614.

56 (XXVII, No. 82.) Negro's Eyeball Sign of Facial Paralysis.—Di un fenomeno non ancora descritto, che si verifica durante la rotazione volontaria massima verso l'alto del globo oculare nei casi di paralisi periferica del N. facciale. C. Negro (Turin).
57 (No. 84.) Sulla genesi della opalescenza nei versamenti pseudochilosi (pseudo-chylous effusions). G. Ghedini.
58 Perforating Ulcer of Foot Cured by Stretching the Plantar Nerve.—La cura dell' ulcera perforante del piede collo stiramento dei nervi plantari. G. Baroni.
59 Changes in Kidney after Injury of Spinal Cord.—Sulle alterazioni funzionali ed anatomo-patologiche del rene, in seguito a lesioni traumatiche del midollo spinale. S. Diez.
60 (No. 87.) The Sucking Reflex in Infants, in the Senile and in the Insane.—Reflesso boccale. A. Perugia and A. Bagolan.
61 Removal of Aderoids in Treatment of Whooping Cough.—Patogenesi e terapia della pertosse. L. Chierici.
62 Unilateral Secretion, Obstruction and Pain in Case of Foreign Body in the Nose.—La diagnosi di corpo estraneo nel naso. V. de Cigna.
63 Note di medicina pratica per la diffusione dell' ipodermoclisi. G. Zanoni.
64 (No. 90.) *Infezione tubercolare primitiva delle tonsille—dei vei palatini—dei testicoli—delle articolazioni. Sua evoluzione ed esiti. G. Ghedini.
65 Le scosse ritmiche del capo nel morbo di Flajani-Basedow (rhythmic jerking of head). O. Bellucci.
66 Il delirio e gli altri sintomi nervosi nella pneumonite crupale. E. Bracchi.
67 (No. 93.) *Action of Grippe on Course of Various Infections.—Sull' azione che l'influenza esercita sul decorso delle varie infezioni. S. Livierato.
68 2 casi di neurosi traumatica. A. Conti.
69 *Contributo alla sintomatologia del carcinoma gastrico. G. Fratti.
70 Tuberculosi della ghiandola mammaria. E. Delfino.
71 Opoterapia tiroidea nel morbo di Basedow. G. Baglioni.
72 (No. 94.) Intorno a 2 casi di leucemia. Cura con i raggi Roentgen. E. De Renzi.

64. **Primary Tuberculous Infection in Monkeys.**—Ghedini reports various series of researches with experimental tuberculous infection of different *organs in monkeys. In all the* experiments the lymphatic system constantly played a predominant part in the diffusion of the infection from the primary focus throughout the organism, and especially to the lungs.

67. **Influence of Grippe on Other Infections.**—Livierato found that injection of the bacteria of grippe with other germs favored the proliferation of the latter. The toxins generated by the grippe bacteria lower the resisting powers or act in some other way that promotes the invasion and proliferation of other pathogenic micro-organisms. He found further that the toxins of grippe bacillus injected after the organism has already been invaded by an *infection having usually a protracted* course, has the effect of materially shortening the course of the latter.

69. **Cancer of the Stomach.**—In the first case described the only symptom to call attention to the stomach was occasional slight hematemesis. There were no digestive disturbances nor pains in the stomach and the appetite was good. The pyloric region was slightly tender on pressure. The patient was a man of 56 and he suddenly succumbed with signs of perforation. Autopsy revealed a perforated cancer of the pyloric region. In the second case a man of 40 had suffered for some time from dyspeptic disturbances and gastralgia when acute rapidly fatal ileus developed. Autopsy showed also in this case a cancer of the pyloric region which might have been successfully removed if the warning of the recurring gastralgia had been heeded in time. No tumor could be palpated in either of these cases.

Riforma Medica, Naples.

Last indexed, page 547.

73 (XXII, No. 27.) Azione della formaldeide sullo sviluppo del bacillo della tubercolosi e dello stafilococco piogeno aureo (action of formaldehyd). G. Martinotti.
74 (No. 28.) *Sopra il mio nuovo processo di amputazione della mammella (technic of amputation of breast). I. Tansini.
75 Blastomycetes' Soluble Products in Etiology of Cancer.—Azione dei prodotti solubili dei blastomiceti in rapporto alla etiologia dei tumori maligni. F. Sanfelice.
76 *Plastic Operations on Bladder.—Esperimenti sulla plastica della vescica urinaria. L. Baldassari.
77 Osservazioni cliniche sulle intossicazioni. F. Sarcinelli.
78 Azione del radio sull' eccitabilita elettrica dei muscoli (radium and the muscles). G. Muggia and B. Ohannessian.
79 2 casi di morbo di Pott nei quali si rinvenne il segno di Kernig. C. Pagani.
80 (No. 29.) Malattia di Glénard con cuore mobile (visceral ptosis and movable heart). G. Spagnolio.
81 Animal Tissues as Culture Medium for Tubercle Bacilli.—I tessuti animali come substrati nutritivi per il bacillo tubercolare. B. de Vecchi.
82 *Il delirio nella fase di guarigione di alcune occlusioni intestinali (delirium during recovery from ileus). P. Capasso.
83 *Resultati pratici dell' impiego del mio tifodiagnostico. G. de Rossi.
84 (No. 30.) Tumori del 4 ventricolo. C. Besta.
85 *Il trapianto tendineo nella cura dello strabismo (tendon grafting). G. Monzardo.

74. **Amputation of Breast.**—Tansini has modified the technic he recommended in 1895, to prevent necrosis of any part of the flap. By cutting the flap so as to include important arteries in the base, there is no danger of necrosis. The pedicle must be 6 or 7 cm. in diameter, and its center should coincide with a point 3 cm. from the posterior axillary line, 5 cm. from the spine of the scapula and 10 cm. from its angle. The flap is an elongated oval, slanting from above downward toward the median line of the back. The anterior margin of the flap starts at the end of the incision where it reaches the axilla, and this anterior margin is sutured to the anterior margin of the defect. The flap contains arteries which insure its nourishment. The technic is illustrated.

76. **Plastic Operations on Bladder.**—Baldassari advocates a technic which has proved very successful in experimental work on dogs. When a small defect in the bladder wall has to be covered he takes a corresponding flap from the bladder wall

itself near by. The flap contains a layer of serosa and a muscular layer, leaving the muscular layer exposed, but this gap can easily be covered by taking up a fold in the bladder wall, freshening the edges if necessary. The muscular layer is split where the flap is cut, leaving the half united with the mucosa intact, and cutting the pedunculated flap out of the other half of the muscular layer with the serosa on its outer side. The pedunculated flap is then drawn over the defect and sutured in place, and the omentum is caught lightly above with a few stitches.

82. **Delirium and Death During Convalescence from Ileus.**—In order to prevent absorption of toxins during recovery from intestinal occlusion, Capasso urges the necessity of purgatives, preferably oil, to free the intestine of foci of intoxication from retained fecal matter. Saline injections, intravenous or subcutaneous, should also be used to help cleanse the organism by "lavage of the blood."

83. **Typhoid Diagnosticum.**—De Rossi announced some time ago that the agglutination test is more sensitive if the cultures of the typhoid or other bacilli are first heated to 60 C. for an hour. A bouillon culture, kept for 24 to 48 hours at a temperature of 27 C., is distributed in test tubes which are fused and heated to 58 or 60 C.—no higher—and kept at this oint for one hour. Bacilli thus treated keep perfectly for ne agglutination test at any time, and the findings are more delicate than with live bacilli, either with the typhoid bacillus, *Bacillus subtilis*, *Bacillus pyocyaneus* or the *Staphylococcus albus*.

85. **Tendon Grafting for Strabismus.**—Monzardo describes his technic for correcting squint due to paralysis of one or more of the muscles of the eye. The principle is the same as in tendon transplantation in case of paralysis of the feet.

Hospitalstidende, Copenhagen.

Last indexed, page 813.

86 (XLIX, No. 26.) Studier over den saakaldte typiske Radiusfraktur. (Concluded.) K. Poulsen.
87 (Nos. 27-28.) *Om Blæretuberkulosens Betydning og om dens Helbredelighed (curability of tuberculosis of the bladder). T. Rovsing.
88. *Et Tilfælde af Trigeminus-neuralgi behandlet med Röntgenstraaler. K. Faber.
89 (No. 29.) Paralysen af Musc. Cricothyreoideus. H. Myglnd.

87. **Bladder Tuberculosis and Its Cure.**—Rovsing gives illustrations of specimens from some of the 56 cases of tuberculosis of the bladder that have passed through his hands. He also gives in a large picture an outline view of the kidneys, ureters and bladder in each case in miniature, grouping them all on a single plate, the tuberculous portions shaded, and each set marked with the initial letter of "recovery," "extirpation" or "carbolic treatment" as the case may be. In the female cases the outline of the uterus and adnexa is added to each set. It is an effectual method for graphic portrayal of the various conditions, for comparison both of the lesions and of the final outcome under carbolic acid treatment. Primary genital tuberculosis only exceptionally involves the bladder, he says, and it is a still rarer occurrence for the bladder to be alone or primarily affected with tuberculosis. As a rule, the bladder lesions have spread from a tuberculous affection of one or both kidneys. The only certain means of determining the condition of the kidneys is by catheterization of the uterus, and only then when the urine from one or both kidneys is found free from evidences of tuberculosis. Rovsing's cases show that a tuberculous lesion in the bladder may spread upward into the second ureter, toward the sound kidney. The urine from this ureter will then show signs of pus and tubercle bacilli when in reality the kidney beyond is still sound. In such cases, instead of abandoning the patient to his fate, as necessarily doomed by a bilateral tuberculous affection of the kidneys, a double exploratory lumbar incision, with possibly ureterostomy, may reveal that one kidney is still sound, so that its mate can be safely removed, after which the tuberculous lesions in the bladder and ureters are liable to heal spontaneously, if not too advanced. In the advanced and extensive cases, he advises treatment with carbolic acid, which he has found very effectual, having completely cured 13 patients by this means. After the bladder has been cleansed of pus he injects 50 c.c. of a 6 per cent. solution of carbolic acid, warmed to about 35 C. The fluid is retained for three or four minutes and then evacuated, when it flows out, muddy or milky. This procedure is repeated three or four times until the fluid comes away somewhat clear. The whole procedure requires only about ten or twelve minutes. The carbolic acid solution is drawn out from the bladder through a catheter, but the bladder is not rinsed afterward. A suppository containing 2 cg. of morphin is introduced into the rectum immediately after the injection, to deaden the pain which is liable to be quite severe for two or three hours after the treatment. Treatment at first—until the urine of the intervening day becomes nearly clear—is repeated every second day, later with longer intervals, and the cystoscopic findings are compared with the previous findings at first every week, then every fortnight and then each month. The results in his cases were that the tubercles subsided and the lesions healed, leaving a smooth white surface with a mother-of-pearl sheen. Rovsing thinks that the carbolic acid penetrates into the cells and interstices, following the same paths the tubercle bacilli have taken after their toxins have irritated the hyperemic mucosa of the bladder and thus produced conditions favoring the entrance of the bacilli into the bladder wall. A 6 per cent. aqueous solution of carbolic acid soon kills tubercle bacilli in the test tube, and its action in the bladder is probably enhanced by the hyperemia and phagocytosis which it induces. Be this as it may, one thing is certain, he says, namely, that for the first time a local treatment has shown itself capable of curing even very extensive and virulent tuberculosis of the bladder. He has never witnessed any serious by-effects. The urine was slightly discolored in some cases, and two little girls vomited a few times the next day. The only drawback is the pain liable to follow the injection, but this can be kept under control with a little morphin. The length of treatment varied from one to six months, according to the severity of the case. A radical cure is possible only when the bladder process is primary or when the primary focus in the kidney has been removed.

88. **Roentgen Treatment of Neuralgia.**—For four years Faber's patient had suffered from trigeminal neuralgia with two intervals of a few months' freedom from pain after resection of the inferior alveolar nerve and later of the mandibular nerve. As the neuralgia recurred with increased intensity and frequency, ten Roentgen exposures of ten minutes each were made of the upper half of the face within sixteen days. Improvement was evident at once and the patient was soon entirely free from pain. There has been no recurrence during the few months since. Faber remarks that it seems incredible that such an old and agonizing affection could be cured with merely five ten-minute exposures of the upper half of the patient's face, but such was the case.

Hygiea, Stockholm.

Last indexed, page 813.

90 (LXVII, No. 1.) Clinical Training in Surgery.—Om klinisk undervisning i kirurgi förr ach nu, med särskild hänsyn till vårt land. J. Borelius.
91 *Om hudepiteliom och deras behandling med Finsenljus (superficial epithelioma). H. I. Schlasberg.
92 Om osteitis deformans. N. A. Ahlberg.
93 Om lefverabscess och dess förekomst i Sverige (liver abscess in Sweden). B. Carlson.
94 (No. 2.) Pawlow's Research on Digestive Processes.—Om betydelsen af Pawlow's arbeten för läran om matsmältningsorganens fysiologi och patologi. L. Wolff.
95 *Influence of Goiter on Growth of Children.—Inflytandet af struma, särskildt Basedowstruma, under pubertetsåldern på längdtillväxt och förbeningsprocesser. I. Holmgren.
96 *Simple Test for Chlorids in Urine.—Ett enkelt förfarande för approximativ bestämning af klormängden i urin. G. Ekehorn.
97 *Till frågan om traumatiskt glaukom. K. Stalberg.
98 "En svensk medicinisk folkskriftsförfattare på 1600—talet." Historical sketch. V. Djurberg.
99. (No. 3.) *Den habituella skoliosen och dess förhållande till asymmetrisk tillväxt. P. Silfverskiöld.
100 *Fall af motoriska neuroser behandlade med hypnotism. E. af Geijerstam.
101 "Nyststjärna" för Katgut (star winding reel). A. Reuterskjöld.
102 N. Rosen von Rosenstein, 1706-1773. O. Medin.

91. **Treatment of Epithelioma with Finsen Phototherapy.**—Schlasberg reviews his experience with 19 cases of cutaneous epithelioma treated by the Finsen technic with eminently favorable outcome. The results were much better and prompter when the growth was thoroughly curetted beforehand, and this

combination of curettement and Finsen phototherapy he regards as a distinct advance. It is free from the possible unpleasant by-effects of Roentgen treatment, while it seems to be fully as effectual at least. The prospects are better the less extensive and the more circumscribed and superficial the growth. If the glands in the region are swollen, the epithelioma has probably burrowed too deep for its ramifications to be reached by the rays. The variety of the epithelioma does not seem to influence the results of treatment, with the possible exception of nevus epithelioma. The cure was complete in 14 out of the 19 cases, although a repetition of the treatment for recurrence was required in 2 cases. From 2 to 30 or more exposures were given, but the number was much smaller in the cases with the preliminary curettement. He has not been able to find any record that Finsen or others adopted this combination.

95. **Influence of Goiter on Growth.**—Holmgren examined 17 patients with goiter, mostly of the exophthalmic type, and noticed that all were above the average height for their years. He found further that the epiphyseal cartilage became united at an earlier age than customary, and yet the body grew so rapidly that such persons were unusually tall. He has never heard this fact mentioned, and yet it completes the modern assumption of the functions of the thyroid gland, especially the hyperfunctioning in exophthalmic goiter.

96. **Simple Test for Chlorids in Urine.**—Ekehorn has devised a chlorometer which he has found very simple and practical for daily use by the busy physician. A test-tube about 14 mm. in diameter and 23 cm. long is graduated as follows: The bottom of the tube is marked off for a space to hold 2 c.c. This is labeled U and contains the urine. A space of 1 c.c. above is labeled I for the indicator. The third line corresponds to another c.c. and is marked zero. Above this the tube is graduated to correspond to each additional c.c. up to 15 c.c. He has two reagents, similar to Volhard's method. The first reagent is a solution of iron sulphocyanid; the second is a solution of silver nitrate. The formula for the sulphocyanid is 0.332 gm. potassium sulphocyanid in 40 c.c. distilled water with a saturated solution of sulphate of iron, free from chlorin, to make 100 c.c. The formula for the silver solution is 5.815 gm. silver nitrate; 50 c.c. of nitric acid, free from chlorin, and of a specific gravity of 1.2, and distilled water to make 1,000 c.c. The amounts of the sulphocyanid and of the silver must be equivalent in the quantities taken. Urine to the 2 cm. mark is first dropped into the test-tube from a pipette. The sulphocyanid reagent is then added to the line I, then the silver solution is added, and the tube is corked and shaken from time to time, until the color reaction occurs. The fluid assumes a grayish-white aspect as it loses the tint of the sulphocyanid. When this has happened, the line corresponding to the upper limit of the fluid represents the proportion of sodium chlorid per thousand. Albumin in the urine must first be coagulated by heating. The method is similar to Volhard's, only the nitrate of silver solution is five times weaker than with the Volhard technic.

97. **Traumatic Glaucoma.**—Stalberg reviews 6 cases from the literature and reports one personally observed in which glaucoma developed after an accident accompanied by considerable emotion or nervous strain.

99. **Scoliosis the Result of Asymmetrical Growth.**—Silfverskiöld has had occasion to examine 3,234 girls in the Gothenburg schools and found scoliosis in 416, that is, in 12.8 per cent. To his surprise, none of the factors usually incriminated in the etiology of scoliosis could be detected in many of the cases, and none common to all. The largest proportion of cases occurred in apparently robust girls of 15 and 16. More careful physical examination of 50 girls with scoliosis revealed an unsuspected asymmetry in development which, he thinks, is probably responsible in large measure for the scoliosis. The right leg was found a little longer than its mate in 37 out of the 50 girls, and the left leg longer in 8; that is, in 90 per cent. of the 50 girls inspected one leg was appreciably longer than the other. The difference varied in different children, being seldom more than 1 cm. In one child the left femur was found to be 0.5 cm. and the left tibia 1 cm. longer than the right. As the children developed into symmetrical growth the scoliosis vanished as a rule. His findings suggest the importance of early detection of asymmetry in development and its correction by extra thick soles and heels, as a means of warding off or curing scoliosis. Orthopedic measures may prove useful as adjuvants, but correction of the asymmetry is the main point in treatment in the majority of cases if not in all. It is possible, he adds, that there may be asymmetry in internal structures beyond our power to detect at present.

100. **Motor Neuroses Treated with Hypnotism.**—Six cases of convulsions or tics are described, not relieved by any treatment until daily seances of hypnotism were inaugurated, when improvement promptly followed. The patients were girls between 11 and 17. In the first case the spasmodic contractions occurred in the face, but, in different groups of muscles at different times. They were first noticed in infancy and had always been severe, not choreiform. After ten daily seances of hypnotism, in 1902, the tic was much reduced and had entirely subsided by the eighteenth sitting. The contractions recurred several times afterward in a mild form, but [illegible]e promptly met with renewed treatment, and after several b[illegible] courses the patient has been permanently free from ser[illegible] trouble since January, 1905, although a slight tendency to [illegible] tic still persists and will probably never be entirely eradi[illegible] The father had been mentally unsound and the mother sho[illegible]ne signs of tabes. The patient in the second case was a feeble[illegible]minded girl of 17, who stammered very much, blushed deeply at the slightest cause, and made involuntary movements with the right arm and leg—an actual and severe tic—whenever she began to speak. The effect of some brief courses of hypnotism was striking, especially as there were no indications of hysteria. In the other cases there was a suspicion of hysteria or of chorea minor. The benefit in a case of chronic chorea was so pronounced that a trial of hypnotism in all chronic cases is urged by Geijerstam. Five seances induced great improvement, and a complete cure was realized after 20 more, with no recurrence during the four years since. One patient was a woman of 27 with severe neurasthenic tremor from childhood, a brother also presenting the same tremor. She improved very much after 25 seances, the improvement progressing after 25 more, although slight traces of the tremor still persist. The hypnosis was applied in the different cases until profound hypotaxis was induced, occasionally with amnesia.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

AMERICAN PRACTICE OF SURGERY. A Complete System of the Science and Art of Surgery by Representative Surgeons of the United States and Canada. Editors, J. D. Bryant, M.D., and A. H. Buck, M.D., New York City. Complete in Eight Volumes. Illustrated. Vol. I. Cloth. Pp. 818. Price, $7.00. New York: William Wood & Co., 1906.

CLINICAL DIAGNOSIS. A Text-Book of Clinical Microscopy and Clinical Chemistry for Medical Students, Laboratory Workers, and Practitioners of Medicine. By C. P. Emerson, A.B., M.D., Resident Physician the Johns Hopkins Hospital, Associate in Medicine the Johns Hopkins University. Cloth. Pp. 641. Philadelphia: J. B. Lippincott Company.

I. MATERNAL TRANSMISSION OF IMMUNITY TO DIPHTHERIA TOXIN. II. MATERNAL TRANSMISSION OF IMMUNITY TO DIPHTHERIA TOXIN AND HYPERSUSCEPTIBILITY TO HORSE SERUM IN THE SAME ANIMAL. By J. F. Anderson, Hygienic Laboratory—Bulletin No. 30. Paper. Pp. 19. Washington: Government Printing Office, 1906.

OUTLINES OF PRACTICAL SANITATION For Students, Physicians and Sanitarians. By H. B. Bashore, M.D., Inspector for Pennsylvania Department of Health. First edition, with forty-two illustrations. Cloth. Pp. 208. Price, $1.25 net. New York: John Wiley & Sons, 1906

UEBER BLINDDARMENTZÜNDUNG. Wann soll operiert werden? By Med.-Rat Dr. J. Baumgartner, Oeffentlicher Vortrag mit Projektionsbildern, Mit. 32 abbildungen im Text. Paper. Pp. 41. Munich: Verlag der Aerztlichen Rundschau (Otto Gmelin).

ANNUAL REPORT OF THE BUREAU OF HEALTH FOR THE PHILIPPINE ISLANDS, Period from Sept. 1, 1904, to Aug. 31, 1905. Paper. Pp. 192. Manila: Bureau of Printing, 1906.

SPENCER MICROSCOPES AND ACCESSORIES, Microtomes, Bacteriological Apparatus and Laboratory Supplies. Paper. Pp. 198. Spencer Lens Company, Buffalo, New York.

ANNUAL REPORT OF THE LIBRARY COMMITTEE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA, for the Year 1905. Paper. Pp. 6.

The Journal of the
American Medical Association

Published under the Auspices of the Board of Trustees.

Vol. XLVII. CHICAGO, ILLINOIS, SEPTEMBER 22, 1906. No. 12.

Original Articles

GALLSTONES AND GALL-BLADDER DISEASES FROM THE STANDPOINT OF THE PHYSICIAN.

NORMAN BRIDGE, M.D.
LOS ANGELES, CAL.

These diseases are common, and they usually come first to the knowledge of the physician. He first prescribes for them and sometimes studies them; frequently he makes a diagnosis.

Whether or not he appreciates their character, he has for them a large measure of responsibility which he can not escape. If he believes a given case has become a subject for surgery, he is responsible to the patient that the consultant shall be capable, that he has the skill in surgical technic to do successfully the several steps of an operation; and, far more important, that he has the knowledge of pathology that fits one to deal with unexpected surgical conditions. The physician may recall cases in which a surgeon has found such conditions and, never having considered their possibility, has blundered in a nonchalant sort of way, to the harm of the patient and the regret of all concerned.

Then occasionally the physician finds the surgeon timid and unwilling to do an operation which, the former thinks, is demanded. This is not a fanciful picture, but actually occurs, and it is a very grave, as well as an embarrassing situation. Equally with the surgeon, even more than he, the physician is responsible both for the diagnosis and treatment of these cases. He can not hide behind his ignorance of their pathology and surgery by pleading that the surgeon knows about them better than he. Such a plea deserves opprobrium.

Further, the physician can often present the urgency of an operation to the patient better than the surgeon. Most people dread operations, and many suspect the surgeons of having undue enjoyment in operating and of being biased by visions of money. For these reasons the physician is a more acceptable counselor; but even he, in these days, is not free from the suspicion of seeking a part of the surgeon's fee.

SYMPTOMATOLOGY.

Every case must have initial medical consideration, as every one requires medical treatment, whether or not it ever comes to operation. Although the symptomatology is now fairly well understood, conditions arise now and then that are decidedly puzzling.

No doubt the chief beginning symptoms of gall-tract trouble have for long been attributed to the stomach. Gastralgia was formerly a very common disorder: now it is properly passing as a frequent pathologic entity. Most cases of pain in the bile tracts are still called gastralgia by a majority of medical men. It is only the sudden, awful colic in the right epigastric region (usually so intense as to require morphin) that is yet widely regarded as true hepatic colic, but the attacks of milder pain occurring periodically are nearly as certain to be in the hepatic structures.

It is substantially true that colic is always the result of muscular spasm, and in the bile tracts it is generally due to the grasp of a stone, the colic ceasing when the spasm relaxes, and the stone perhaps falls back or forward into a larger cavity. Stones not in the grasp of contracting fibers rarely, if ever, cause true colic. Pains from the ulceration of stones are usually long continued and rarely attended with spasm, while they are often attended with fever and other evidences of sepsis.

But colic may be due to spasm of other muscles besides those in the gall tracts, and we are in danger of going too far in the current generalization, for we must remember that there are gastric pains from ulcer, irritation by stomach contents, and even from distension. These may cause pains closely simulating the hepatic colic. The following case is illustrative:

Case 1.—A girl, aged 25, was seized with sudden intense epigastric pain, closely resembling gallstone spasm. It fluctuated, was worse and better every few minutes. She had been treated for stomach trouble and had lived on a restricted diet for some time. She had eaten a rather hearty meal three hours before, the pains having begun two hours after the meal. The stomach was found globular, and distinctly palpable at the moment of severest pain, less so as the suffering grew less. The pulse and temperature were normal. An attempt to pass the stomach tube led to prompt vomiting of a large quantity of undigested food, consisting mostly of prunes. The pain ceased immediately and did not return for two months, during which time the patient was under observation.

This was undoubtedly a pure case of gastric pain, due to spasmodic contractions of the stomach in its effort to evacuate its irritating contents through a spasmodically closed pylorus. Yet, in the absence of palpation, it strongly simulated the common gallstone colic.

But a similar experience of relief of epigastric pain from evacuation of the stomach contents obtains in true hepatic colic, and a lull in the suffering is, therefore, no proof of the disappearance of the whole cause of the pain. The causation of hepatic colic by overloading the stomach or by sudden indigestion is so common that prompt evacuation of the stomach is usually in order. The following case is in point:

Case 2.—Mrs. B., aged 50, had for 4 days occasional slight discomfort in the epigastric region. It had once or twice awakened her at night and kept her awake for half an hour. Then severe pain came on with little or no tenderness and no fever. The pain fluctuated but little. Zinc sulphate, 20 grains, promptly brought up a lot of spinach and liquids, with marked although not complete, relief. Then a dose of morphin gave absolute relief, which continued three days. No fever followed, and after a restricted diet for two days she began to eat more freely, when pain of a severe, although not a terrible character, came on, which was nearly continuous for a day, when she vomited a large amount of macerated asparagus tips with prompt relief of pain. But the pain soon returned, lasting another day, when it suddenly ceased. A single small gallstone was found in the stools a day after the subsidence of the pain. During this last attack there appeared slight but distinct tenderness over the gall bladder and a little jaundice the last day or two. Temperature was 101 at times. There was a slight leucocytosis (8,000 whites) at the height of the pain.

Pains below the scapula (right most often) and about the sternum probably do result from irritation of the bile ducts due to stones and otherwise, but, to my mind, they are unreliable as a guiding symptom; at best they corroborate other and more positive indications of biliary trouble. Many a physician has been led by ordinary chest-wall neuralgias, when unsupported by other evidence, to a false diagnosis of hepatic disease. Probably, too, some have ignored these pains when they have been reflex and due to gall-tract trouble.

After the pain, the most important symptom is tenderness over the gall bladder, found best by deep steady pressure, while the respirations move the organ against the fingers, and by sharp percussion over this region at the moment of full inspiration. Then come chills and fever, perhaps very irreguarly, and leucocytosis, with possible jaundice, although this last is never proof of infection. Palpability of the gall bladder and enlargement of the liver may be urgent evidence, and local peritonitis is most urgent of all. The evident peril of the patient depends on the degree of these signs and symptoms; that is, the general evidence of infection from the hepatic region. The hidden peril depends on the uncertainty as to exactly what may be going on behind the wall of the abdomen. Pain is not *per se* evidence of peril, infection is, and this often comes indirectly from the thing that provokes the pain. As to some of these perils we may profitably review our past experiences for instructive, as well as surprising, lessons, particularly our work during the years when we were not thinking of the gall bladder as a large factor in the pathology of the abdomen.

There is certainly one class of gall-bladder affections that has been almost universally misunderstood. Such are certain chronic ones, with profound chills and fever, occurring in an irregular, erratic manner, extending over years of time, often with long intervals of quiescence and with almost no local or focal signs. The following remarkable case[1] illustrates what is meant:

Case 3.—Mr. C., widower, aged 77, well preserved and plump, had lived a regular and moderate life of office business. For fifteen years he had had an occasional sudden attack of chill and high fever. A profound chill would be followed by high temperature for a few hours; then a profuse perspiration. The next day he would feel well and might so continue for six months before another attack. Sometimes he thought the attacks were provoked by slight indiscretions in diet; he was never guilty of a great indiscretion. They grew more frequent with the years.

Course of Disease.—During the winter of 1900-1901, while sojourning in California, these attacks had become rather frequent, coming as often as once a week, then two or three times a week. In some of them he was slightly delirious. An attack lasted about 6 hours and the temperature often reached 104. He now began to feel greatly prostrated for some hours after an attack. The chill would come without any regularity as to time, although it came oftener in the afternoon or evening. There was no pain or tenderness, that he was conscious of, in any part of the body, either during the attacks or between them. The intervals were without fever.

He lost 20 to 30 pounds in weight within 6 months and was growing progressively weak. There was very trifling tenderness beneath the right costal arch, elicited by deep pressure and manipulation, and no other sign of disease. Digestion was fair, bowels were regular, or a trifle constipated, and the urine contained a few hyaline casts, but no albumin, and the solid output was nearly up to the normal. The blood showed no malarial organisms during an attack and there was slight leucocytosis (8,500 whites).

Operation.—Operation revealed a gall bladder contracted to the size of the end of a small finger and, of course, situated deep in the abdomen. Its walls were very thick and the gall-bladder site of the liver was covered with considerable fibrous tissue, evidently the result of chronic inflammation. The viscus itself was found filled with a mucoid material, without a stone. A drainage tube was fastened at the opening of the gall bladder and kept there for several weeks, when it was forced out by the healing of the sinus from the bottom.

The first week after the operations there were two slight chills, followed by a temperature of 101, lasting but a short time. Thereafter, and up to last report, which was April, 1906, no symptoms of his old trouble have appeared. The operation seems to have effected a complete cure. Unfortunately, it was not possible to make a bacteriologic culture from the contents of the gall bladder.

Another case had a similarly contracted gall bladder, without chills and fever, but with years of frequent sharp attacks of diarrhea:

Case 4.—Miss M., aged 26, gave a history of several severe paroxysms of epigastric colic, some 5 or 6 years before. They were without known fever or jaundice, and left no symptoms the patient was conscious of. Later she had periodic attacks of diarrhea that was substantially rebellious to all treatment. This trouble lasted three years or more. Then developed suddenly a localized peritonitis about the gall bladder, with fever and great tenderness. Under medical treatment the acute symptoms subsided, but there was deep tenderness and slight fever remaining a month later, when the case was operated on by Dr. Murphy. A gall bladder, much contracted, thickened and retracted, was found full of pus, and without a stone. It was drained; and it recovered with a complete subsidence of the attacks of diarrhea.

In this case, like the previous one, there was fibrosis about the gall bladder and about its usual place against the liver, showing chronic inflammation to have existed for a long time. In this case diarrhea was as mysterious as the chills and fever in the previous one. Both were clearly produced by gall-bladder disease.

That such cases as these must come to be better studied and given surgical relief earlier goes without saying, and the responsibility lies almost solely with the physician. They constitute his opportunity and his duty. Such cases are numerous in every community, and every physician of large experience has the dubious pleasure of recalling instances of temporizing neglect or complete failure to appreciate what, in the light of present-day knowledge, were very evident gall-bladder cases that projected themselves before him with proof that now seems as plain as day. But he was blind and deaf.

I must mention another case that vividly illustrates the long continuance of gall-bladder symptoms without recognition:

Case 5.—Mr. A., aged about 54, had had for about a dozen years, occasional seizures of intense epigastric pain, lasting one to six hours, and often ending in vomiting. Morphin injections were often required. The attacks nearly always followed a hearty meal of rather indigestible food. Many times the pain was distinctly to the right of the mesial line. Sometimes there was tenderness for some days after an attack. Only once or twice had there been jaundice and then only for a brief time.

---

[1] This case has already been partially reported by Dr. J. B. Murphy who preformed the operation.

I saw the patient, in consultation with a friend (to whom the case was also new), a day after an attack began. Then a localized peritonitis about and below the gall bladder was demonstrable. Fever, tenderness, and constant pain were present, with rapid, weak pulse, and general evidence of desperate sickness. There was no jaundice. It was supposable that a rupture of the gall bladder (or of the stomach at the site of an ulcer), had occurred to produce the peritonitis. The situation precluded the possibility of even an effort at surgical relief and the man died the next day. The postmortem showed a normal stomach, a large gall bladder, partially collapsed, a half inch of its fundus being folded over on itself, and a plastic peritonitis over a space about and below it of 6 by 8 inches. This region was slightly bile-stained near the gall bladder. The gall bladder had evidently leaked from distension, but no gross rupture was discoverable. The contents consisted of mucoid material and a little bile. The cystic duct was not patulous. There can be no doubt that for many days before this attack, the enlarged gall bladder and the urgent need of surgery could have been easily discovered by the most casual examination.

The true significance of enlarged or distended gall bladder is often missed, especially in the presence of jaundice. Long-continued jaundice with large gall bladder rarely means stone, while such jaundice with no distension of the gall bladder means stone with probably more than 80 per cent. of certainty. Long-continued jaundice with distended gall bladder signifies, with a very large percentage of certainty, some tumor obstructing the common duct. Such tumor may be in the pancreas, liver or intestine, and is likely to be malignant. With the distension of gall bladder may come also considerable enlargement of the liver as a whole, without pain or tenderness and without irregularity of its surface such as is often present in carcinoma.

SURGICAL TREATMENT.

Whether operation ought to be done in all cases of proven gallstones or of suppuration or distension of the gall bladder is the same question over again of the misfortunes of the appendix. Patients recover or become quiescent, remain so for years (even with gallstones), and die of other diseases or of old age. Hence one camp of doctors contends that in all such cases we should not operate until forced to by the most exigent conditions. The other camp says that, for the sake of safety, operating should always be done and usually done promptly, since the next attack might be fatal. Both are in part right; neither can prove the other wholly wrong. The unknowable elements of the subject, which are of the nature of a game of chance, that permit so many patients to wait and never come to great harm and that tempt doubters to say, as to some patients operated on, that possibly they might have recovered or become quiescent without operation if they had waited; and that send so many waiting patients to death in surprising ways, who apparently might have been saved by timely and proper operations; these uncertainties put off, and will continue to put off, the day of final, complete agreement among the profession about this class of cases.

One of the elements referred to is the utter impossibility of ever knowing the exact pathologic state until the body is opened; another is the indeterminate measure of the physiologic resisting power of the particular patient until after he is dead.

The fact is that, with gall-bladder infection proved, whoever waits for an operation takes some risk of his life, for he can not know that a hidden avenue of fatal infection is not being formed. It is the right of any responsible person to take that risk if he likes, whatever the hazard may be; and in some cases the hazard does not seem to be much. Certainly the mere presence of stones without infection is not dangerous *per se;* it is the uncertainty as to when the stones may start an infection that constitutes the menace. But a sudden profound chill followed by high fever of short duration, and then by profuse perspiration, are not necessarily proof of an infection that puts life in imminent peril, unless there are also the local signs of a severe character, such as great tenderness, pain and swelling. Case 3 is proof of this proposition.

People are taking great personal risks in manifold ways all their lives and with the lightest thought. But if one suffering from cholelithiasis, to the extent of producing marked symptoms, would minimize to the lowest point his danger of death from it, he probably will have it dealt with surgically; always provided he has a surgeon who is wise in pathology and procedure, as well as expert in technic, and provided he, the patient, has good vital organs. That general statement is still true of the diseased appendix; it is true of gallstones and gall-bladder infection as well.

All cases of chronic cholelithiasis in which the suffering has led to the opium habit should be operated on. Every case of known distension of the gall bladder by fluid of any sort is in constant peril and should be operated on if possible. If there is reason to believe that the bladder contains pus, operation is urgently demanded. And in all cases in which frequent recurrences or the persistence of symptoms indicate the progressive contraction and fibrosis of the gall bladder operation should be insisted on, for in these there is some danger of an explosion of infection that may destroy life and a certainty of the disease getting worse and not better. An operation in the absence of urgent infection (after an attack is over, the so-called "interval"), supposing good vital organs and a good surgeon, is almost devoid of danger; a small fraction of 1 per cent. of mortality.

MEDICAL TREATMENT.

All cases of proven gallstone or gall-bladder trouble are proper subjects for surgical consideration, whether they are to be regarded as surgical cases or ever come to operation. Whether operation is to be done or not, when conditions do not sound the insistent need of an operation, or the patient declines, or the physician sees reasons against an operation, proper medical treatment should be instituted always, and persistently carried out. This is as true of the gallstone troubles as it is of those of the appendix.

What are such measures? In the acute cases there should be absolute rest of the body. Rest of the stomach and bowels to the extent of starvation for some days is best, especially where peritonitis is present or threatened. Nutrient enemas may be allowed tentatively, but never nutrition by the stomach in such cases. The upper abdominal organs must be kept still; not shaken about by peristaltic movements. During the initial pain it is always best to evacuate the stomach promptly, and for this purpose an emetic of sulphate of zinc is perhaps better than the stomach tube, since it tends to relax spasm and often evacuates food contents that could not pass through a tube. Enemas are best to evacuate the bowels in the acute cases. After starvation begins, the bowels accumulate little fecal matter and give little trouble. General measures to sustain the powers of life, as nutrient enemas and perhaps hypodermics of strychnin, are always in order after a few days of the starvation. Perhaps there is some benefit to be expected from hot poultices or ice bags over the epigastrium. It is much to be regretted that our views of the exact effect and value of these measures should not be more settled and unanimous than they are; some of us prize the hot applications, some use the cold, while others deny the value of either.

In the subacute and chronic cases the daily full flushing of the bowels by alkaline laxative waters is useful, but it is irrational to suppose that gallstones are thus washed away. Nor do olive oil or any other of the pretended expulsive agents have the smallest effect. The thing that happens is probably merely the elimination of effete matter from the body, thus increasing the physiologic resisting power. This process is aided by a restricted diet of the most proper foods and by general good hygiene. It is the custom in Europe to send patients with chronic gall-tract diseases to some of the spas (mostly to Carlsbad) for a course of the waters, to see if an operation can be avoided by the appearances of recovery. These measures are all useful, for the patient gets the benefit of an abstemious regimen, for a time at least, in addition to the waters, and thus is frequently able to improve in a marked manner.

To go to the springs, drink freely of water and live on a low diet, be much out of doors, and rest from work and perhaps from cares is always wholesome for these cases. Such a vacation can be taken once or twice a year with great propriety, but it has little power to postpone the day of a final surgical operation or death, if, on returning home, the patient goes back to his former habits of overfeeding, irritation of stomach, lack of depuration, and generally unhygienic life. This latter is just what a large number of patients are constantly doing. By this course they invite infection from irritating things in their gall tracts and so hasten surgical intervention. This last is no misfortune if the surgery can be done at the right time and under the best conditions; but they usually regard it as a misfortune and think they are fighting it off by their occasional water cures.

The only proper course for such patients, who would be fairly well and avoid surgery, is to live lives of absolute regularity and abstemiousness, rigidly temperate in everything except the use of water, and hygienic and moderate in every day's living. One day of overdoing, overeating or overdrinking, or of severe chilling of the body, may start an infection and precipitate an acute attack that will destroy life unless prevented by timely surgery.

If a chronic gallstone patient who refuses surgery wishes to manage his health in the usual erratic manner and so make an operation or death certain, it is perhaps his privilege as a citizen to do so. But it is only common fairness that he should know the inevitable tendency of his ways, and it is for the physician to show him this and to point out a wiser course, and then leave the responsibility with the patient, where it really belongs.

Operative Treatment of Lung Cavities.—According to J. Berry, in the *Clinical Journal*, June 6, 1906, incision and drainage constitute the only operation on lung cavities that is of practical importance. This is more feasible in cavities at the base than at the apex or deep seated in the lung. It is indicated in abscess where the results are good (mortality 20 per cent.) and in gangrene (mortality 35 per cent.). In bronchiectasis and tuberculosis the results are not encouraging. A patient with abscess due probably to the bursting of a liver abscess into the lung made a good recovery after operation.

NEPHROLITHIASIS.

A. H. CORDIER, M.D.
KANSAS CITY, MO.

In the searchlight of that greatest of all beacons, pathologic and surgical experience, new territory is being invaded and taken possession of by modern surgery, and fewer and less debatable grounds remain along the border line of internal medicine. In no locality is this better settled than in nephrolithiasis. Stones in the pelvis of the kidney or ureter, when known to exist, are looked on as dangerous foreign bodies and dealt with accordingly. Occupation, locality, or age does not, in my opinion, have any direct etiologic bearing on these cases. As a matter of fact, we do find more cases in persons between the ages of 20 and 50 years, but we find more people between these periods. I have found this condition to exist about equally in the two sexes. High living and sedentary habits are said to predispose to the formation of stones in the kidney, but my experience does not sustain this claim. The separation of the solids from the urine in the pelvis of the kidney gives rise to the condition known to the layman as "gravel" and produces only mild symptoms of mechanical irritation of the ureter, bladder and urethra. This condition may be transient, or it may lead to more serious stone formation by these little particles becoming agglutinated, by the presence of an infection, blood, mucus or pus, yet it is possible for a stone to form without the evidence of bacterial invasion or structural changes in the kidney. The nucleus of a stone may be composed of one salt of calcium, or uric acid, while the body of the calculus is made up of another. Carbonate of calcium stones are rare in man, and are deposited in alkaline urine, while the uric acid and oxalate of calcium are found to have their origin in acid urine. The chemistry of these cases, while very valuable and interesting from a scientific standpoint, is overshadowed by the diagnostic and surgical phases, to the busy practitioner and surgeon.

Oxalate of lime calculi are found most frequently, and usually produce the severer types of symptoms and pathology.

The right kidney, like other structures on the right side of the median line in the abdomen, is the one most frequently affected by stone, yet in rare instances both organs have calculi.

VALUE OF EARLY SURGERY.

To appreciate thoroughly the value of early surgery in these cases, one must understand the pathologic changes wrought by time in the ureter and kidney.

It is only a question of time in every case of renal calculi until an infection is developed, and, when once started, a nephritis is the result; if the ureter is occluded, dilatation of the pelvis takes place, and a pressure obliteration of the parenchyma is sure to follow unless quickly relieved. Perinephritic abscess, with extensive burrowing of the escaped fluids, takes place in some cases. The source of the infection may be from the bacteria in the blood, but usually is from an ascending ureteritis. A surprising number of infectious cases have their origin from the *Bacillus coli communis*, probably by direct invasion through an aseptic adhesion of the kidney to the ascending colon.

The number of stones and their sizes present a wide range, from one to dozens, from a mere speck of sand to a stone weighing many ounces.

I have found that the cases of uric acid stones, as a rule, have only one small, irregular, angular, speculated stone, while the oxalate of lime stones have been large, multiple stones, with roughened surfaces, taking the shape of the kidney pelvis and calices. The phosphatic variety is usually an irregular, friable, semi-mushy stone found in old suppurative cases (Fig. 1). The carbonate of calcium stone, a rare variety, is smooth, multiple, irregular and very hard, producing kidney structural changes only slowly.

The range in weight of stones removed in my own work has been from a few grains to nearly four ounces. The calculus, as a rule, is found in the pelvis of the kidney or in one of the calices, yet it is of no uncommon occurrence to find a good-sized stone imbedded in the parenchyma. These are the cases that so often give rise to postnephritic abscess. These imbedded stones are often overlooked at the time of the operation.

Morris estimates that both kidneys are affected in about 10 per cent. of the cases. In none of my cases have I found both organs with stones in them.

The uric acid and oxalate of calcium stones form more easily than the pasty, semi-solid, phosphatic deposits.

A small stone may pass from the kidney and give rise to no symptoms, and a very large calculus may be found as a surprise in the pelvis of the kidney at a postmortem. Several subjective symptoms may be absent in the presence of a stone easily palpable externally.

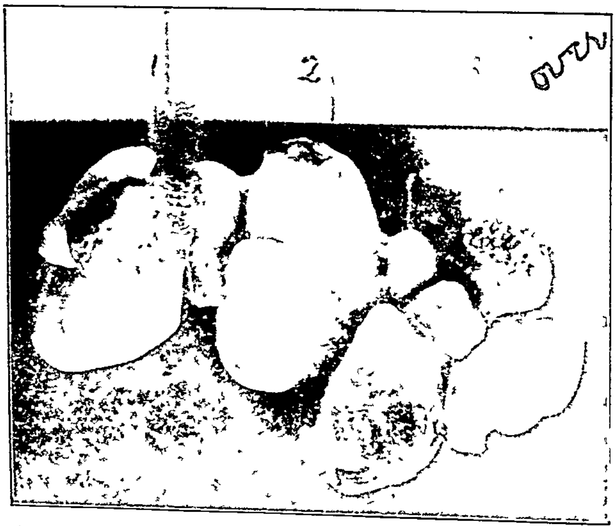


Fig 1.—Nephritic calculi, carbonate of calcium Weight, 1,540 grains.

A healthy kidney is sooner or later converted into a diseased one by harboring these foreign bodies. This change usually takes one of the three courses: Interstitial sclerosis, atrophic changes in parenchyma due to calculous hydronephrotic pressure or suppurative pyelonephritis, and rarely carcinoma or sarcoma as the result of chronic mechanical irritation. These pathologic changes have all shades of variation from a mild microscopic change to a complete destruction of the kidney with death of the patient from coma, amyloid changes in other organs, with a hectic accompaniment and death. While a stone remaining in the kidney is of much danger to that organ, the hazzard is materially increased if the calculus, in its endeavors to reach the bladder, becomes lodged in the ureter. A stone thus situated may cut its way out of the ureter and lead to urinary infiltration, or completely block the flow of urine from that kidney and destroy the functions of the organ by pressure of retained urine, or it may be the source of a calculous anuria by interfering with the function of the opposite organ. The persistence of pain is a matter of no small consequence in such a case.

DIAGNOSIS.

In making a diagnosis of stone in the kidney, it might be well for us always to remember that there are a number of other maladies producing symptoms misleading in character, and, again, a stone may exist without producing the typical stone history, or the symptoms may be manifested in a remote locality. We know that many obscure febrile symptoms are produced by a stone in the gall bladder; the same is true of nephrolithiasis. A stone that disturbs the surface epithelium and permits absorption may give rise to a urinary (septic) chill, the source of which may puzzle the diagnostician. I have seen a number of such cases.

If at a nephrolithotomy a large stone is found and there is a short symptomatic history, we all know that the stone was a long time forming; hence must have had a long quiescent period. I am firmly of the opinion that in such a case symptoms were present, but not correctly interpreted. The use of the microscope and the sifting of obscure evidence will often lead us to make a correct diagnosis where others have failed. Lumbago, a pain referred to the glans penis, or clitoris, increased desire to urinate, retraction of testicle, etc., all, as a rule, are sympathetic manifestations. A carefully compiled clinical history extending over a period of years will often clear the way to a correct deduction. An attack of pain in the side, or back, ten or fifteen years ago, may have been an attempt to expel a calculus that has remained quiescent in pelvis or kidney ever since, the patient being in danger all the time of the development of a suppurative process. Tenderness, as a symptom of renal calculi, is often absent, and too much reliance should not be placed on it. Tenderness, as a rule, is found only in those cases in which there exists a marked enlargement from inflammatory involvement of the kidney. Pain is present in the great majority of these cases. Of much diagnostic value is hematuria, as with few exceptions blood can be detected in the urine unless the ureter is completely occluded. In that event the presence of renal colic or pain, with an enlargement of the kidney, would aid in the diagnosis. The referred pains are often present during the passage of the stone along the ureter. The ilioinguinal, iliohypogastric and genitocrural are the nerves most frequently affected.

In renal colic the typical diagnostic symptoms will depend on the size and shape of the stone, as well as on its consistency and surface condition and on the elimination and nature of the attack, which lasts from a few minutes to several days, and disappears as suddenly as it appeared, the stones reaching the bladder or dropping back into the dilated pelvis of the kidney. These attacks may recur at any time, depending on the number of stones or the ability of any stone to block the ureter.

A feature that is noticeable in many cases is the increase of the pain and colicky spells from riding on a rough road. The pain during the passage of the stone is the most intense of any suffering and is usually accompanied by vomiting and profuse diaphoresis. If much blood or pus is present, a chemical test for albumin may be misleading unless the microscope be used also. Hyaline casts are found in a certain percentage of these cases and are evidence of stone irritation to kidney structure.

operation. On two or three occasions I have resorted to the use of rubber tubing carefully tightened about the pedicle of the kidney to limit the loss of blood. This will rarely be necessary.

After the stones have been removed, the kidney irrigated and the patency of the ureter established (if the case was not one of severe infection), the kidney may be closed as with any other wound, using chromicised gut for that purpose, taking care that the sutures do not go through the pelvis and thus act as a nucleus for further stone involvement. If it is a suppurating case the pelvis should be packed with gauze and a rubber drain put in. The gauze will aid in controlling the bleeding, especially if good firm pieces of gauze packing are put in around the kidney also. The wound is dressed in the usual way. This gauze should remain in place for several days, as a too early removal will induce a troublesome hemorrhage. Do not become discouraged at the duration of the drainage, as many of these old cases will drain for months, ultimately closing for good.

The removal of the kidney in any case is a matter that should receive very careful consideration. The indications for a nephrectomy are becoming fewer and rarer, as we understand the dangers of such a removal, and the recuperative powers of a crippled kidney if the source of irritation is removed.

When possible, the stone should always be removed through the parenchyma, as an incision into the upper ureter or pelvis will incur more risk in the development of an unhealed urinary fistula.

CONCLUSIONS.

1. Nephrolithiasis is more prevalent than is generally supposed.
2. A stone having formed in the pelvis of the kidney, if too large to pass, will sooner or later produce symptoms demanding its removal.
3. Suppuration in stone cases as a rule is a late process, and should be prevented by early surgical treatment.
4. There exists a special cause for stone development in the right kidney; 80 per cent. of my cases have occurred in the right kidney.
5. With a carefully obtained clinical history, the diagnosis of stone in the kidney is easy.
6. Obscure, persistent pains in the region of the kidney, in a patient who had a renal colic years ago, should lead to an exploration of the organ.
7. A wound in a healthy kidney heals quickly.
8. The operation of nephrolithotomy has a very low mortality.
9. Hemorrhage from a kidney is generally easily controlled.
10. At time of operation, the patency of the ureter should be established.
11. The kidney should not be removed if it has a patent ureter or unless it be practically destroyed by the disease.
12. Postoperative patience and faithful effort on the part of the surgeon, will result in the saving of many organs; otherwise removal will be necessary.

Typhoid Strumitis.—Inflammation of the goiter is described by Baradulin in a man 36 years of age who had had a goiter for 29 years. During the fourth week of typhoid fever an abscess developed in the right half of the goiter, which was opened, and bacteriologic examination revealed typhoid bacilli. —*Russky Vrach.* No. 14, 1906.

THE SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCER AND ITS RESULTS.*

WILLIAM J. MAYO, A.M., M.D.
Surgeon to St. Mary's Hospital.
ROCHESTER, MINN.

The contributions to the literature of ulcer of the stomach and duodenum have become so numerous that it will be impossible in a paper of this character to give credit for the many valuable advances which have been brought out by individual workers. I wish in this connection, however, to express my appreciation of their labors.

For more than twenty years the complications of this malady have received attention. Operations for benign stenosis of the pylorus and some acute secondary manifestations have occasionally been performed, but not until the last five years has there been a surgical invasion into the field of unhealed ulcers with a view of giving relief from pain, under-feeding and chronic disability which so frequently accompany the disease.

Acute ulcer of the stomach and duodenum properly belong to the domain of internal medicine, and surgery has to do only with the complications such as perforation, hemorrhage and obstruction.

The surgical treatment of acute perforations of the stomach and duodenum is now on a sound footing, the results depending on speedy diagnosis and prompt operative relief. Patients operated on within the first five hours usually recover; after ten hours the majority die. We have had 7 gastric with 2 deaths and 9 duodenal with 3 deaths.

Suture of the perforation and pelvic drainage with or without irrigation, the patient being subsequently maintained in the semi-sitting posture (exaggerated Fowler's) for several days, gives the best results.

One mooted point concerns whether or not a gastrojejunostomy shall be done at the same time, as a considerable percentage of patients following perforation will develop stricture, adhesion, or other deformity in the healing process. If the perforation lies in the duodenum or close to the pylorus it should be sutured transversely to avoid interference with the lumen of the part involved. Generally speaking, if it seems probable that stricture or other secondary condition will result and the patient is in good condition, gastrojejunostomy should be performed providing it can be done without spreading the already present infection. If in doubt, a living patient is better than a completed operation at a greatly enhanced risk.

Hemorrhage from the stomach occurs in two forms, acute and chronic. Recurring acute hemorrhages are best treated by opening up the stomach or duodenum, locating the bleeding point and suturing the part firmly with catgut on a curved needle from the inner (mucous) side. The outer surface is then exposed and protected over this area by a few mattress musculoperitoneal sutures of linen (modified Andrews method). We have not found gastrojejunostomy for acute hemorrhage a reliable procedure. Out of 6 cases we have had 1 patient bleed to death within two weeks after gastrojejunostomy and a second saved by opening up and securing the bleeding vessel, while 5 who have been treated by primary operation on the bleeding point with or without excision of the ulcer; all recovered.

---

* Read in the joint session of the Sections on Practice of Medicine and Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Chronic hemorrhages, on the contrary, can be cared for by gastrojejunostomy, especially if the ulcer is situated in the duodenum or near the pylorus. In a number of instances we have, however, excised the ulcer and closed the defect by plastic operation planned in such way as not to interfere with drainage by subsequent contraction. Several of these cases amounted to gastric resections with end-to-end suture.

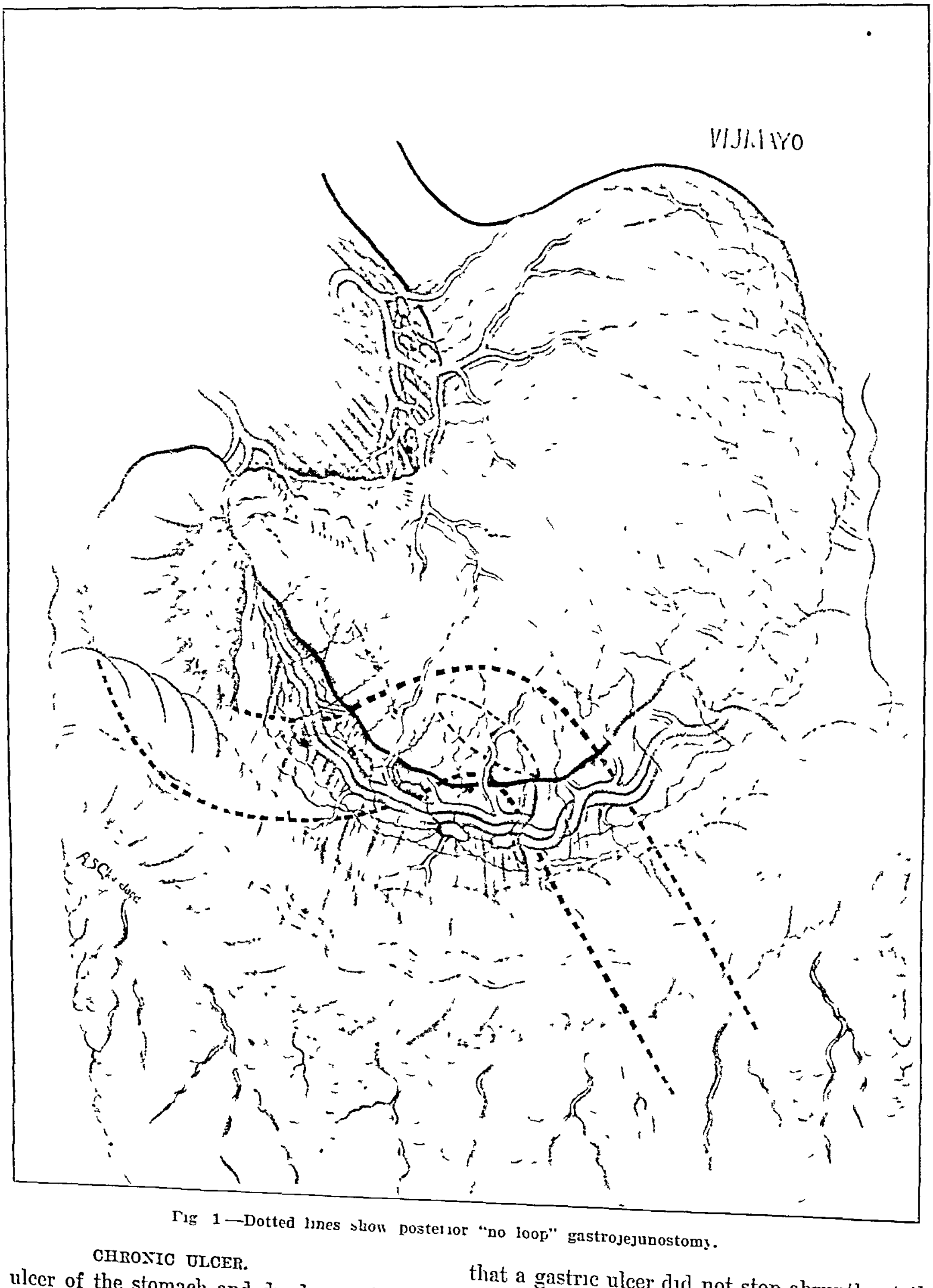


Fig 1—Dotted lines show posterior "no loop" gastrojejunostomy.

CHRONIC ULCER.

Chronic ulcer of the stomach and duodenum is most common in men and is essentially a disease of adult life. It entails years of invalidism on the victim and in fully 25 per cent. is the direct cause of death, while indirectly through anemia it permits of general infections, tubercular or otherwise, and thus doubles the mortality. Surgical interference should be considered when the failure of medical treatment is made manifest by a continuance of the symptoms or frequent relapses.

Our experience (W. J. and C. H. Mayo) covers 600 operated cases up to May 1, 1906, 436 stomach, 135 duodenal and 28 stomach and duodenum. In 46 classified as duodenal the duodenum was primarily at fault, the stomach being involved only at the pyloric ring. It was rare that a gastric ulcer did not stop abruptly at the pylorus.

Gastric ulcers were multiple in less than 15 per cent. of the indurated and estimated at about 20 per cent. of the mucous lesions. The most common form is the saddle ulcer of the lesser curvature above the pylorus extending flap-like down the anterior and posterior wall (prepyloric).

Duodenal ulcers involve the two inches immediately below the pylorus and extend up to within at least three-fourths of an inch of it. In all but 5 cases the bowel lesion was single.

Of the 163 duodenal ulcers, 77 per cent. were males and 23 per cent. females and in all but 7 cases the site of the ulceration was indurated, the thin intestinal wall enabling ready identification. In the stomach, on the contrary, the thick tissues sometimes prevented accurate localization of a mucous lesion, the proportion being 70 per cent. indurated and 30 per cent. non-indurated. Three of the acute hemorrhagic cases were of the mucous variety, while all but one of the acute perforations occurred through the scar of a partially healed ulceration.

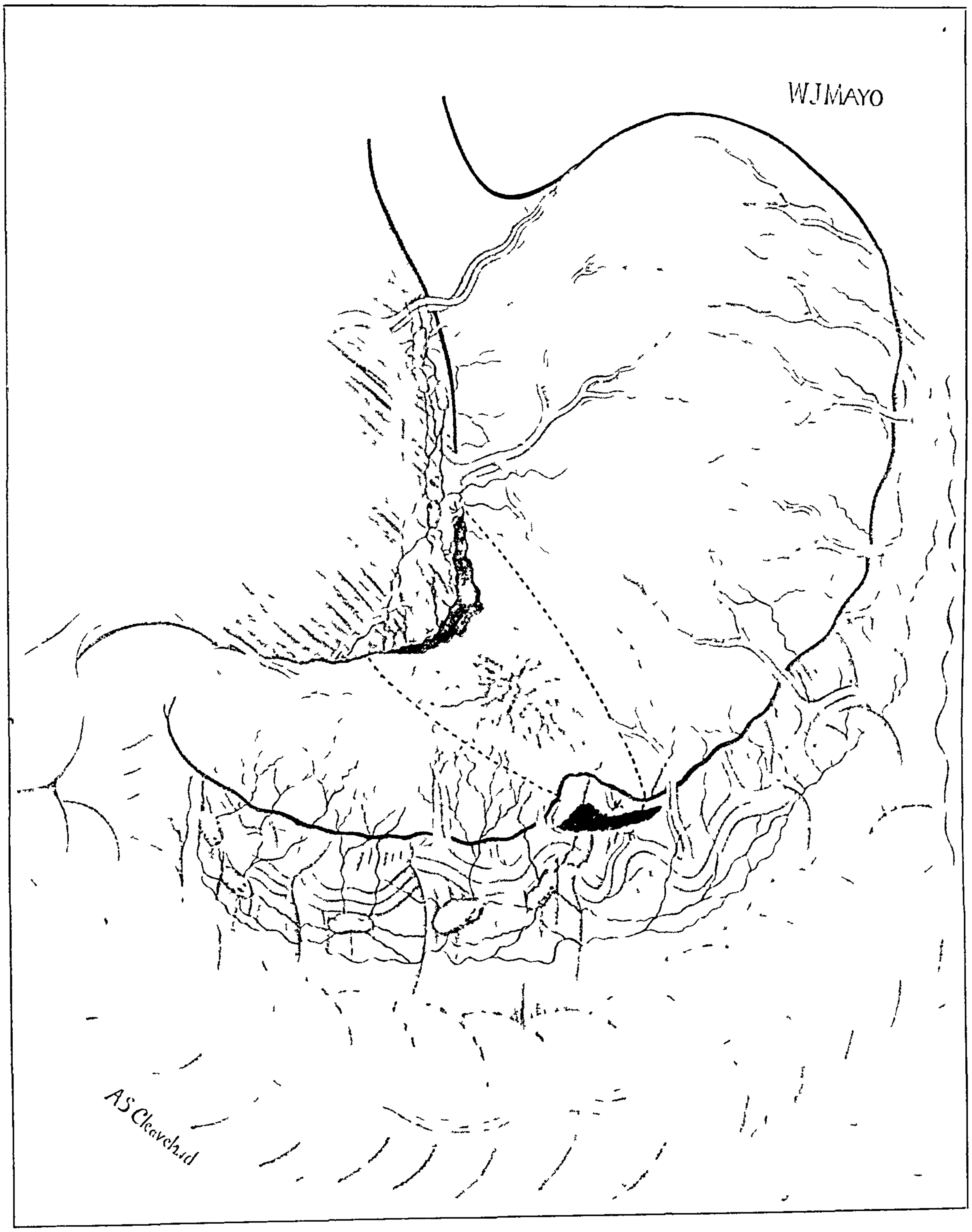


Fig 2 —Resection of hour-glass stomach with fields in gastrohepatic and gastrocolic omenta ligated Dotted lines show site of proposed resection

The predominence of the indurated over the non-indurated is even greater than would appear from these percentages. During the past year more experienced surgical examination has shown that over 85 per cent. of the stomach ulcers coming to operation have been indurated and less than 15 per cent. non-indurated. There is no question but that the frequency of non-indurated mucous lesions in the stomach and duodenum has been and still are greatly exaggerated. The very large majority involve all of the gastric coats and are capable of demonstration at the operating table. Gastric ulcers were found with nearly the same frequency in males and females. In this connection I would again call attention to the fact that ulcer of the duodenum is nearly as common as in the whole of the stomach and as more than three-fourths are in males the increased frequency of occurrence of gastric and duodenal ulcer in the male sex is accounted for. In our earlier work duodenal ulcers in the vicinity of the pylorus were classed as pyloric and added to the gastric group. In the past two years we have learned to differentiate more accurately and in the last 100 gastric and duodenal ulcers operated on, 47 were duodenal, 44 gastric and 9 had an independent ulcer of ach organ.; 62 were males and 38 females; 87 out of he 100 were of the indurated variety.

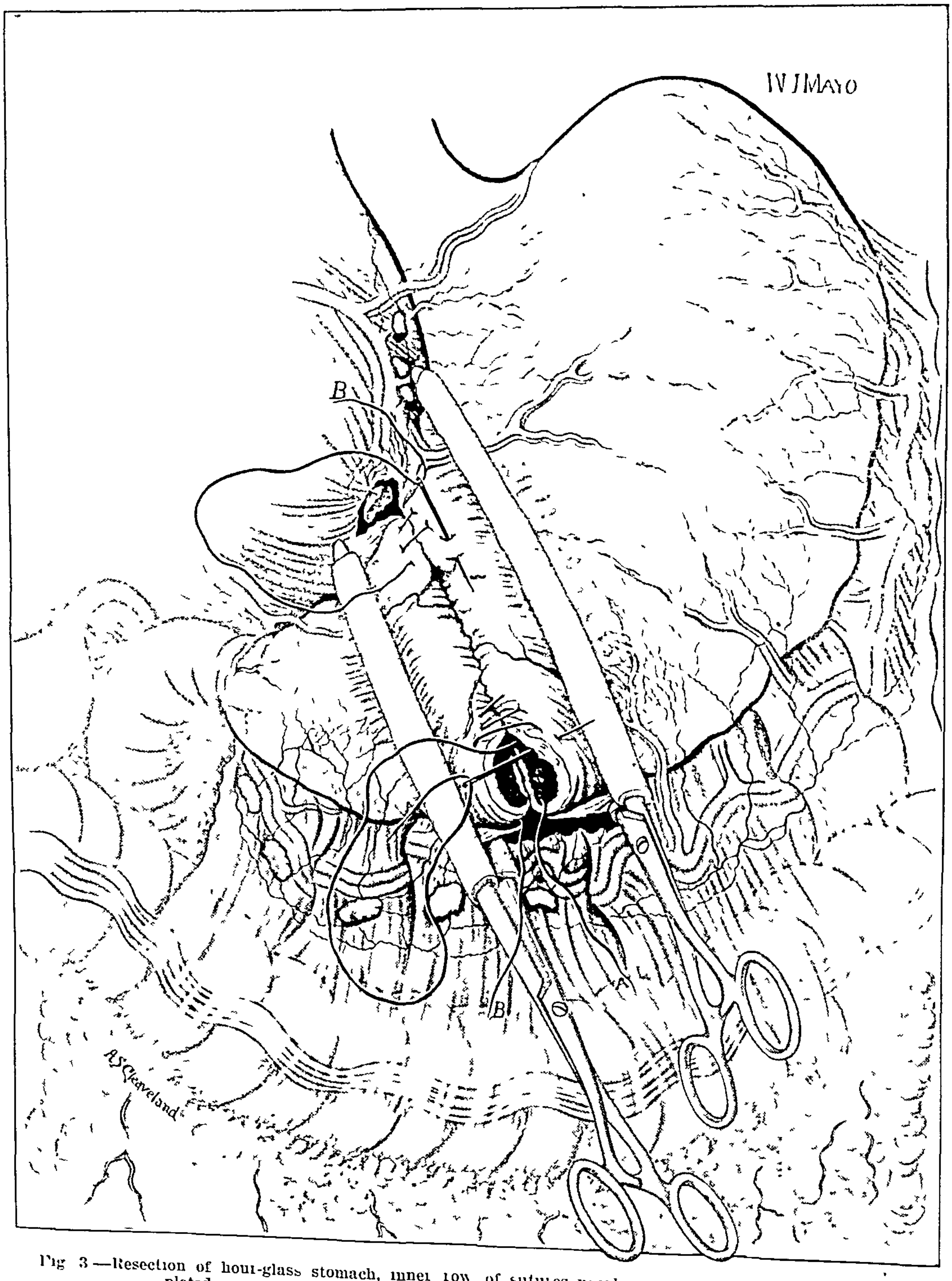


Fig. 3.—Resection of hour-glass stomach, inner row of sutures nearly completed (catgut), outer row completed on posterior surface and beginning on upper anterior surface (linen)

That a very large proportion of chronic ulcers are nedically incurable is recognized by the majority of unprejudiced investigators. It now remains to be shown whether operative treatment is justified by its results.

GASTROJEJUNOSTOMY.

Gastrojejunostomy is the operation which has justly earned the most prominence in the treatment of gastric and duodenal ulcers. It is based on the common sense principle of giving rest to the diseased part by diverting the food and gastric secretions to a new outlet which should be on the storage side of the stomach at its lowest point under the cardiac orifice. The method of choice is the one without a loop made on the posterior surface through an opening in the transverse meso-colon. The distal end of the jejunum is attached to the lowest point and to the left, the proximal part to the right three-

(*Continued on page 931.*)

SOME PATHOLOGIC FEATURES OF THE PULP.*

V. A. LATHAM, M.D., D.D.S., F.R.M.S.
CHICAGO.

In offering for consideration a few ideas on the diseases of the pulp, I do not mean to infer that its pathology is different from that of any other part of the body. As a general rule, inflammation presents the same set of phenomena wherever it is situated, subject to the variations peculiar to the organ in its especial location. We must never forget that disease of an organ is seldom or never a local affair; in other words, its effects are far-reaching and other structures must always become involved. In teaching the subject, this point is one that is very difficult to impress on a student's mind, for collateral anatomy, physiology and pathology seem to be forgotten in studies in the special structure under consideration. A simple carious cavity is not the only thing by which to diagnosticate a patient's suffering.

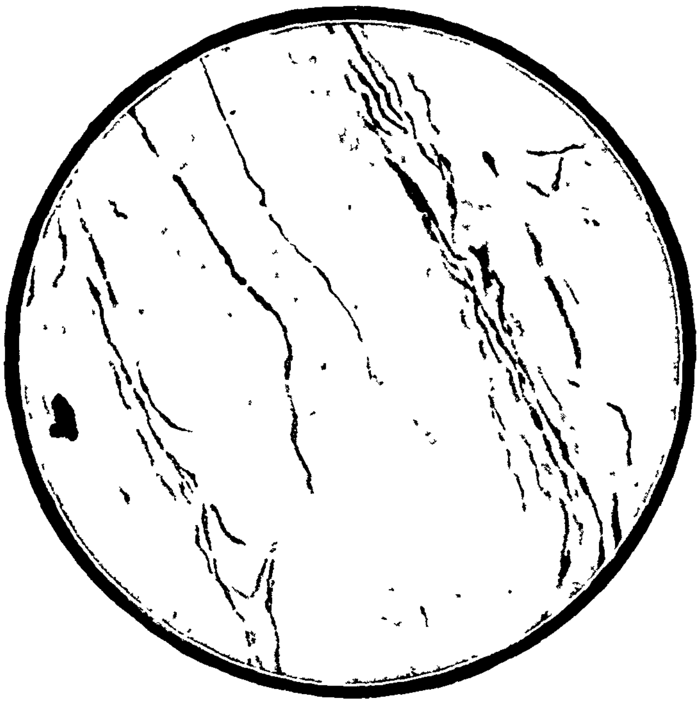


Fig. 1.—Hyperemia of pulp. Stasis in vessels. Cells just trying to escape through walls. Note nodes of Ranvier in nerve fiber bundles. Myelin collecting in masses and degenerating.

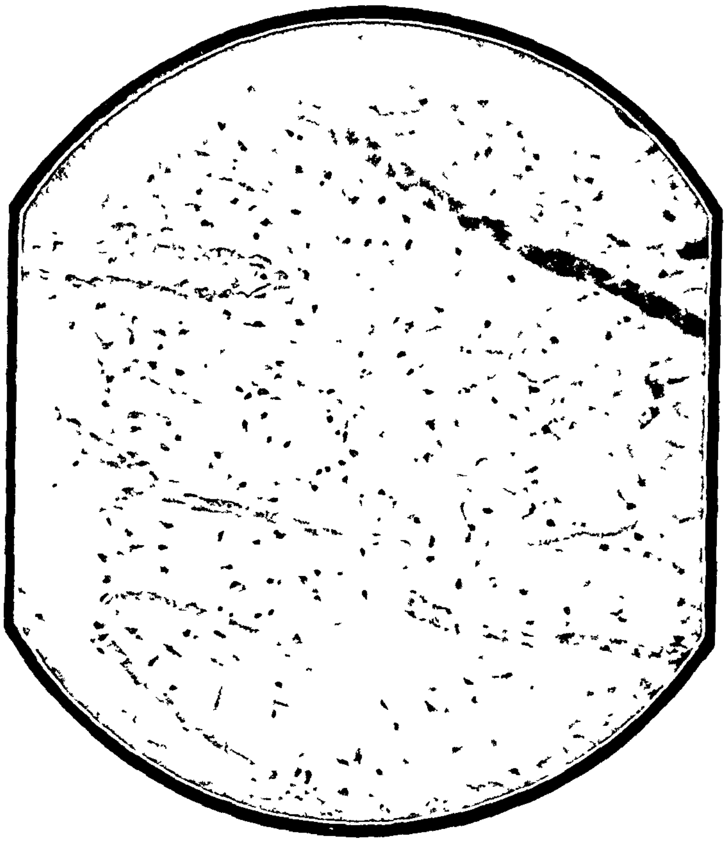


Fig 2—Hyperemia and early resolution

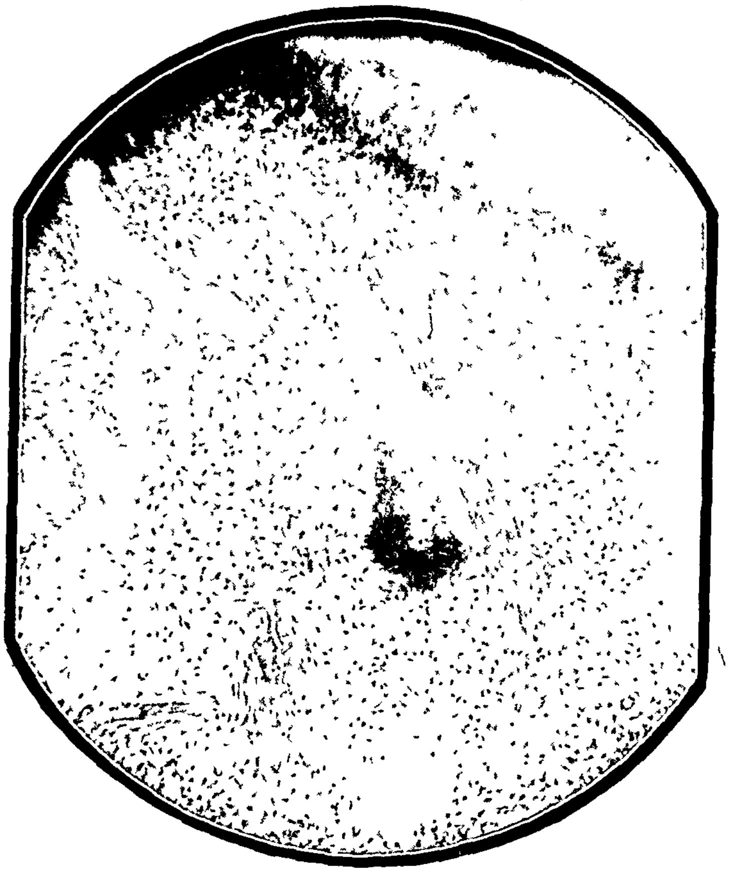


Fig. 3—Rhexis. Extravasation from vessels; edema; cell proliferation. Early pulpitis.

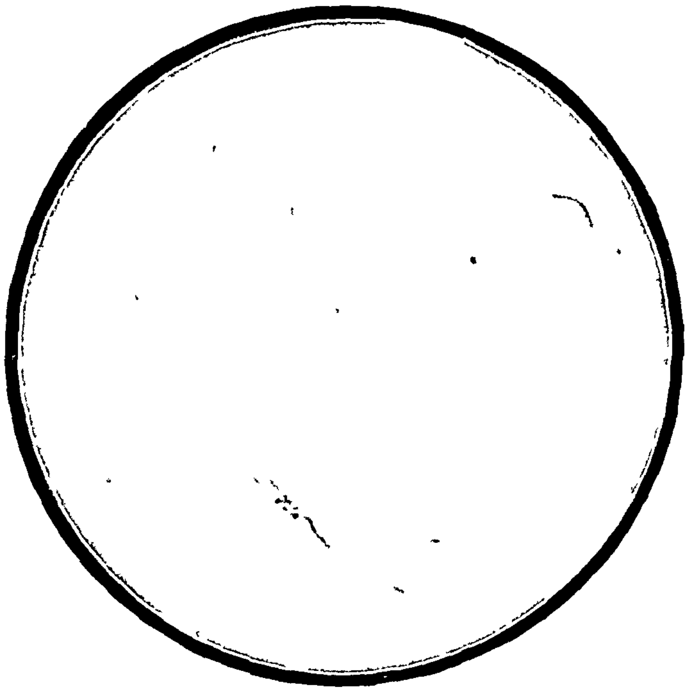


Fig. 4—Tortuous vessel of pulp; showing danger if interfered with. Edema. Cloudy swelling among the cells and badly staining reaction.

HISTOLOGY OF THE PULP.

In former papers given in this Section[1] will be found a general résumé or compilation of both the histology and the bibliography of the pulp. It will be noted that as yet very little, if anything, is absolutely proved in its structure, and it is essential for our science that more work should be done along these lines of research. The histology and pathology of the pulp are simple, in some ways, yet at the same time very difficult. The structure of the pulp is not analogous to any other permanent tissue of the body. It has been likened to the umbilical cord or Wharton's jelly. Certainly the varieties of cells are many and their anastomosing processes are very difficult to demonstrate with the ordinary stains. If they are true connective tissue, Van Gieson's method should give the red reaction, but it does not, even with the coarser fibers for which it is best applicable.

---

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] THE JOURNAL A. M. A., 1901, 1902, 1903. Especially "Résumé of the Histology of the Pulp." THE JOURNAL, July 12, 1902

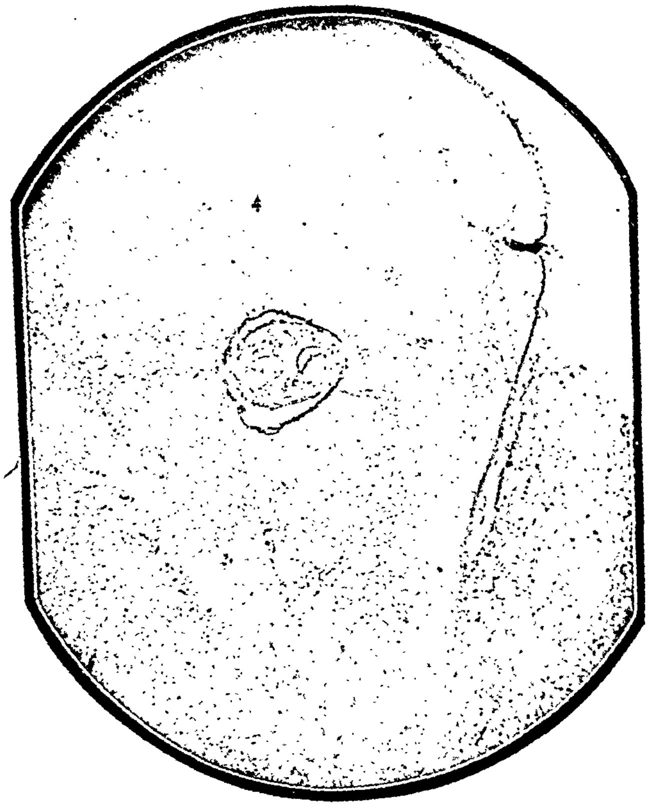


Fig. 5.—Pulp and peridental membrane, showing calcification around pulp or nerve. Note the many minute canals in same section often a cause of repeated attacks of pain after so-called pulp extraction in pyorrheal teeth.

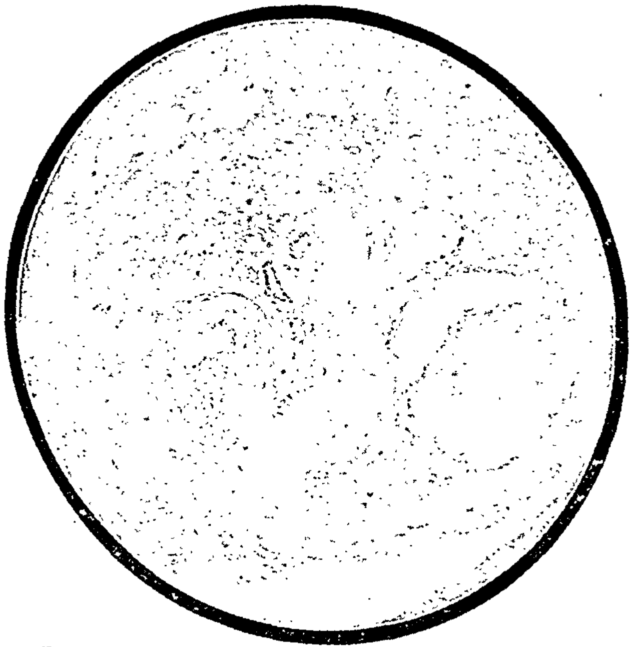


Fig. 6.—Same as Fig. 5, but magnified to show the condition of the pulp vessels. Arteriosclerosis. Venous thrombus.

In some special cases in which the pulp is of a more firm structure, almost fibroid, it is excellent. In earlier cases, as in the growing pulp, I have had better results with Ribbert's phosphomolybdic-acid-hematoxylin stain after alcoholic fixation which shows the finest fibers of connective tissue, if present. In fetal sections, the method of staining with sulph-indigotate of sodium and carmine is excellent.

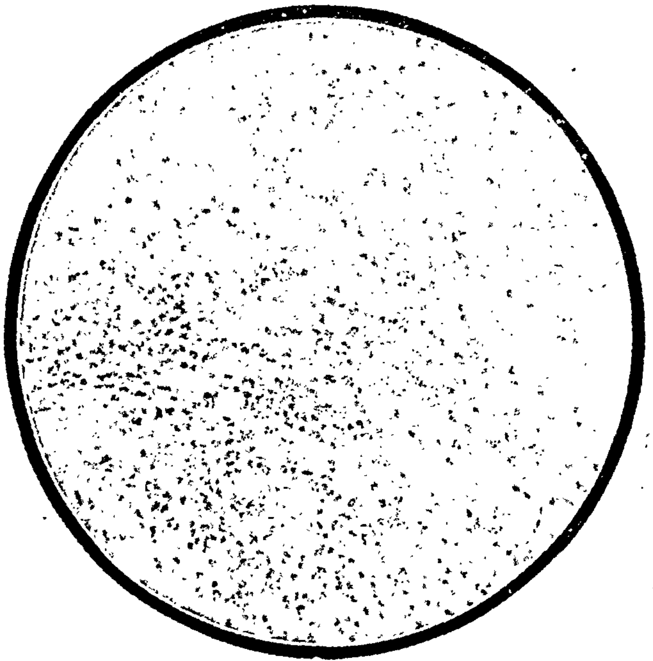


Fig. 7.—Proliferation of round cells; early fibrous tissue formation; resolution of pulpitis.

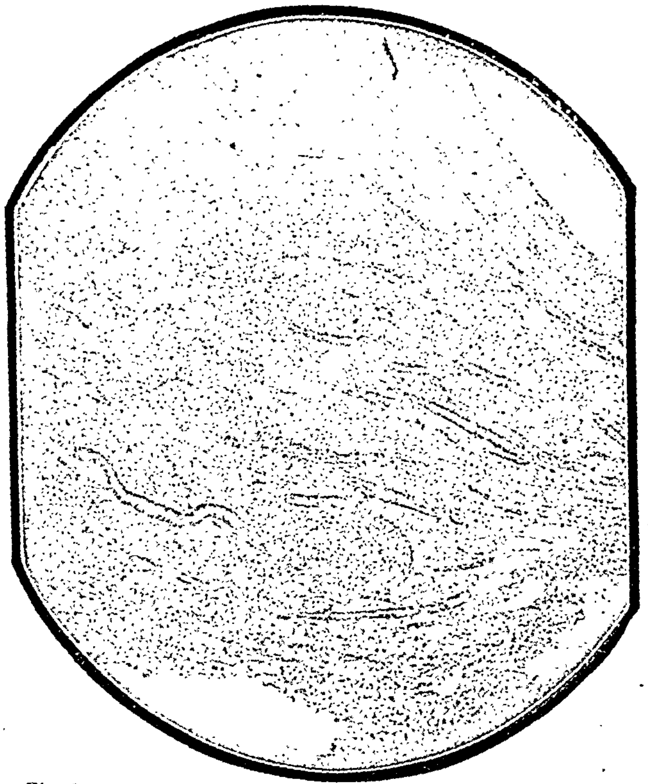


Fig. 8.—Coagulation necrosis. Areas of early suppuration. Capillary embolism.

The great difficulty that I have encountered in my work has been to determine what comprises a normal pulp. As yet the histology is incomplete, and if we compare structures in sections taken at different periods of life we find a difference in them, especially in the first molars, which have non-striped muscle fibers. So far it has not been easy to obtain freshly extracted teeth at stated periods so to make a study from an average of a number of cases of healthy persons. According to Dentz, those extracted for irregularities are abnormal in many cases. From this it will be seen that it is sometimes difficult to find a particular pulp showing some early pathologic condition, and nowhere is this more true than in the different forms of pulpitis as classified by Arkövy. Again, so little case-recording has been done in a systematic way that we are far from sure of clinical signs as yet given; certainly they do not agree with the pathologic findings.

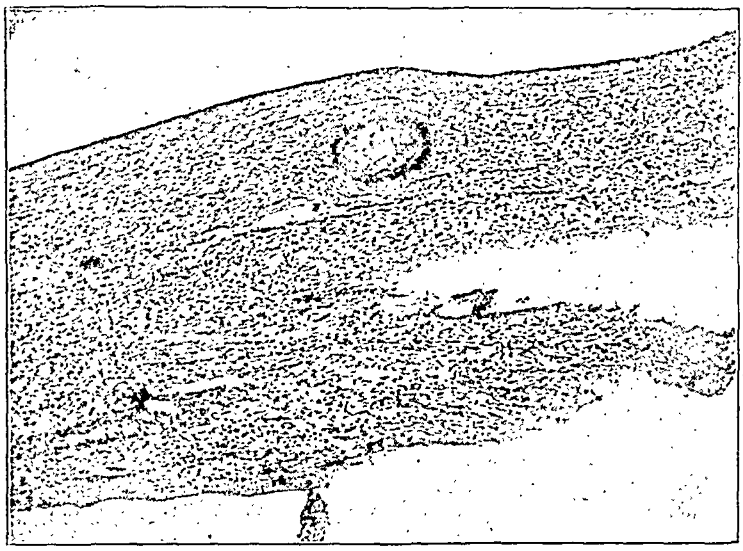


Fig. 9.—Interstitial pulpitis with pulp stone *in situ*.

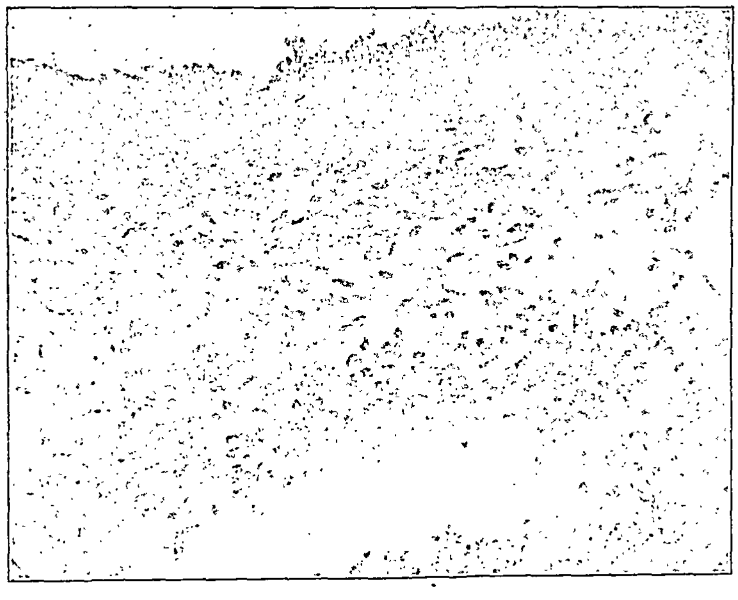


Fig. 10.—Abscess, limiting wall of round-celled infiltration, or so-called pyogenic membrane ulceration. Gangrene. Odontoblastic layer.

SYMPTOMS OF PULP DISEASES.

Our text-books show that a whole series of diverse diseases of the pulp produce like symptoms, and that a whole series of diverse symptoms have for their basis a like pathologic picture. The location, the physiologic disturbances and the diseases to which the pulp is subject are more destructive and far reaching than in any other organ of the body where we have an outlet by the anastomoses present. The only method of relief in many cases lies in lessening the circulation through the vasomotor system and depletion through the excretory organs so often evidenced by the sudden stoppage of the pain when a patient is frightened on reaching a dentist's office.

CHANGES IN THE PULP.

In the case of the pulp we must consider the following facts: a. The delicate structure of the pulp is apt to undergo rapid secondary changes after an inflammatory attack whether from a constitutional or a local cause. b. Its location and poor methods of egress for exudations and dangers from compression. c. Fissures and lesions of dentine and enamel are not always able to recuperate for perfect repair. d. If a pulp has been exposed it is difficult to disinfect and hermatically to seal it under artificial methods, for chemicals act differently in different teeth and individuals. e. The small surface, the many enemies of both a bacteriologic and anatomic nature, together with almost invisible cracks in the enamel (only seen when the teeth are dry) render the occurrence of inflammation, even before decay has apparently reached the surface of the pulp, almost a sure occurrence. (f) The position and relation of the pulp, for in ill-developed teeth the pulp chamber may extend by minute processes abnormally near to the surface or even to the enamel. In such teeth many interlobular spaces are usually seen in the dentine, and the ready absorption of oral fluids and growths of yeast organisms soon cause caries. This is especially the case in the temporary incisors and the first permanent molars in early childhood and after infectious or gastrointestinal diseases followed by chemical abrasion and erosion and hyperemia of the pulp due to irritation of the nerve mechanism of the pulp. g. The question of whether lymph spaces are in the pulp or if the dentine may not act as an analogue through the tubules is still under discussion. The lymphatic supply of the jaws and teeth has not yet been determined.

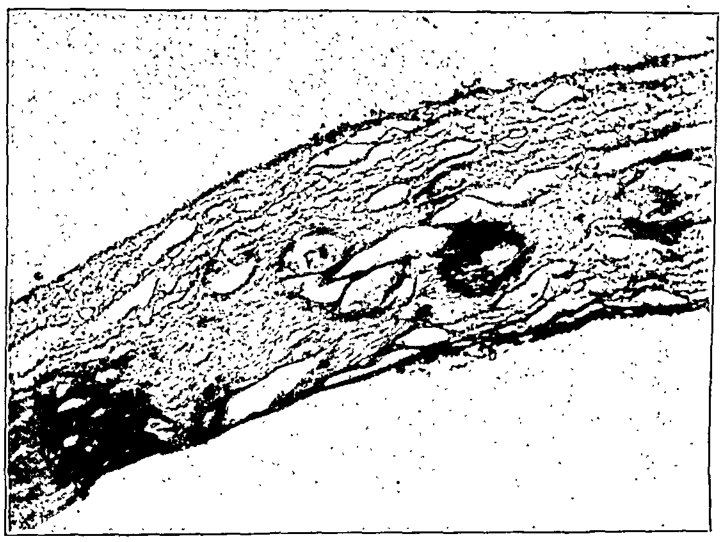


Fig. 11.—Reticular atrophy of the pulp (fibroid). Myxomatous reticulum nuclei at points of intersection and calcareous degeneration.

PULPITIS.

Let us now review the most common disease of the organ, viz., inflammation, and follow the stages.

Definition.—The definition given by the late Sir John Burdon-Sanderson is perhaps one of the best to cover so many processes and variations in different cases. "Inflammation is the succession of changes which occur in a living tissue when it is injured, provided that the injury is not of such a degree as to destroy at once its structure and vitality." To follow the pathologic changes Podwyssozki's definition is good. "Inflammation is a local reaction of the living tissues against the irritating substance. This reaction is chiefly produced by a phagocytic activity of the mesodermic cells, and it may precipitate not only changes in the vascular system, but also the chemical action of the blood plasma and tissue fluids in liquefying and dissolving the irritant agent."

Etiology.—The causes of inflammation are usually:

A. Predisposing:
  1. Deficient blood supply through walls.
    (a) bad air, (b) food,
    (c) hemorrhage, (d) anemia,
    (e) heart disease, etc.
  2. Presence of impurities or poisons in the blood, as in:
    (a) chronic alcoholism, (b) Bright's disease,
    (c) diabetes, (d) gout,
    (e) syphilis, (f) lead, phosphorus and mercury poisoning.
  3. Deprivation of healthy nerve influence by injury of a nerve center or trunk.
  4. Strumous diathesis.
  5. Old age.

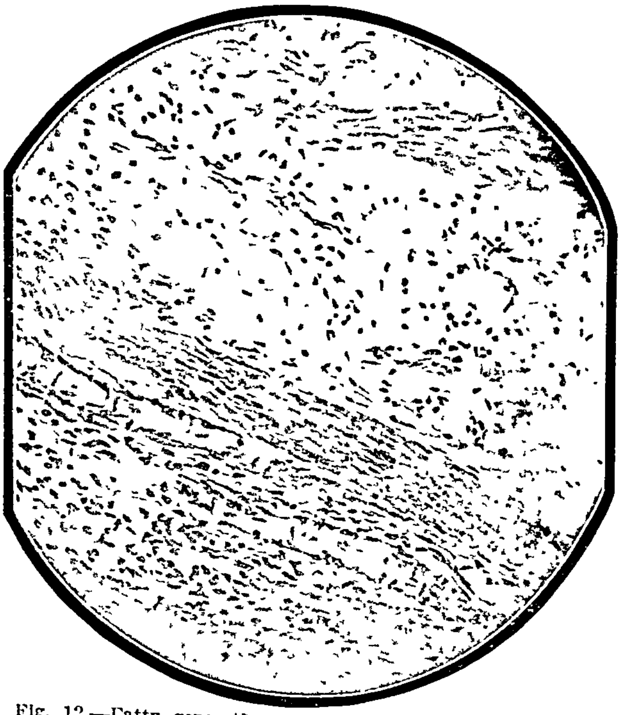


Fig. 12—Fatty generation of pulp. Sclerosis of nerve bundle Interstitial pulpitis.

B. The exciting cause is always an irritant, which may be:
  (a) *traumatic*, direct violence.
  (b) *chemicals*, acids, alkalies, caustics, vesicants.
  (c) *bacterial* fermentation, irritants, putrefactional, ptomains, leucomains.
  (d) *electric*, battery, lightning, non-insulated wires.
  (e) *thermic*, heat and cold.

Symptoms and Signs.—These may be:

1. Irritant.
2. Granulation.
3. Determination or active hyperemia.
4. Disturbance of circulation.
5. Increased motion, oscillation, retardation.
6. Stasis (partial or complete).
7. Vascular dilatation.
8. Exudation—migration, diapedesis, rhexis, etc.
9. Swellings, edema.
10. Terminations and sequelæ.
  (a) Resolution, absorption, or organization.
    1. Vascularization,
    2. Granulation.
    3. Scar tissue (cicatrix).
  (b) Chronic inflammation or sclerosis, fibroid thickening, interstitial pulpitis, cirrhosis.
    1. Hyperplasia,
    2. New formations (neoplasm).
  (c) Suppuration.
  (d) Abscess, necrosis.
  (e) Ulceration.
  (f) Gangrene.

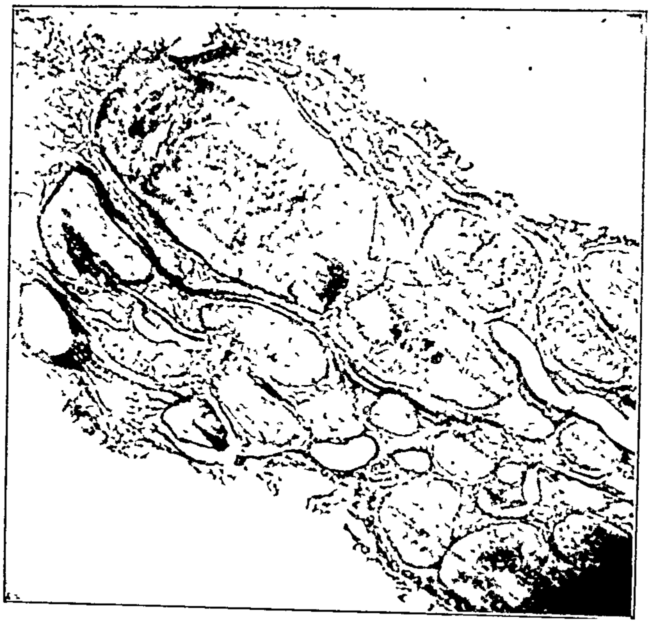


Fig. 13.—Colloid degeneration. Calcification not present of reticular or fibroid degeneration.

Chemical products of putrefaction are the chief agents in producing spreading inflammations. For fermentation or putrefaction (sepsis) there must be (a) dead animal matter, (b) some water, (c) oxygen, (d) a certain temperature, (e) presence of a ferment, which is the product of living micro-organisms. Species *Schizomycetes* (bacterial) known as saprophytes.

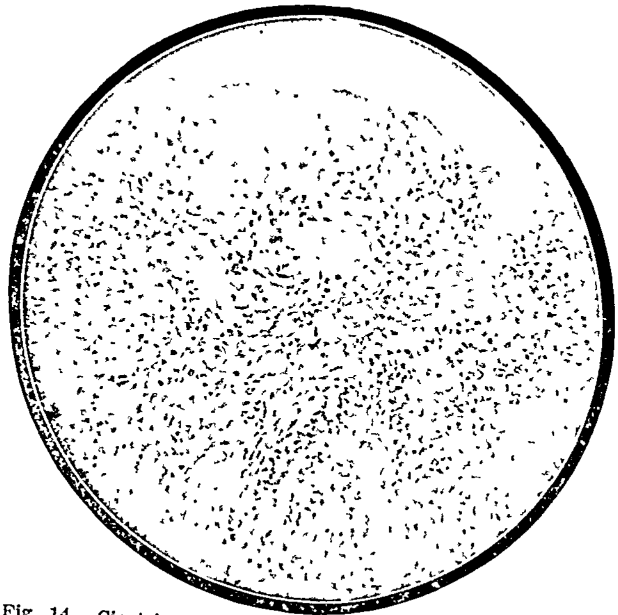


Fig. 14.—Cicatrix of pulp. Dense hyaline cell areas simulating granulation of epithelium.

The inflammation is caused not by the bacteria, but by the chemical products (sepsin and ptomains) which form in putrefactive processes, soak all the tissues and act like any irritant fluid or poisonous alkaloid.

The Bacteria of Inflammation.—Infective micro-organisms are important in cryptogenic or so-called idiopathic inflammations. Erysipelas and some forms of periostitis, pulpitis, periodontitis seem to depend on these germs and malignant pustule is proven to do so. These bacteria multiply and produce irritating products called ptomains which set up inflammation. Saprophytic bacteria live only on dead animal matter and are incapable of existing in live tissues. Some species by protoplastic activity obtain food from dead organic material, multiply and cause changes in the fluids in contact with their surface, known as fermentation. To this process are due: (a) Decomposition of serum and pus in a wound; (b) conversion of milk sugar into lactic acid in souring of milk in the stomach; (c) conversion of urea into ammonium carbonate, and so formation of ammoniacal urine in the bladder, causing cystitis, etc.

Albumin of dead organic matter in contact with these bacteria decomposes into peptones, then into ptomains and so into alkaloids.

Mode of Entrance of Bacteria.—Bacteria may effect an entrance (1) by a wound, thus producing local inflammation; (2) by lymphatics, whence they proceed to the nearest lymphatic glands, where they may be arrested; (3) by the circulation; (4) they may get into small veins and so gain the circulation at once and lodge in capillaries of the various organs; (5) from mucous membranes, as in gingivitis and diphtheria; (6) by migration from one point to another, as by extension of pulpitis gangrenosa to the submaxillary glands, as phthisis spreads from the larynx to the intestines or bronchial glands to lungs and so into the circulation. Influenza is often a cause of otitis media, oral infection and death of a pulp; (7) diseased tissue produced by one kind of bacteria may be secondarily infected by another kind. For example, croupous pneumonia is frequently infected by the tubercle bacillus and the tuberculous tissue by the pyogenic micrococcus (mixed infection). Influenza bacilli in the blood reach the pulp and cause pulpitis, ending in gangrene and cellulitis.

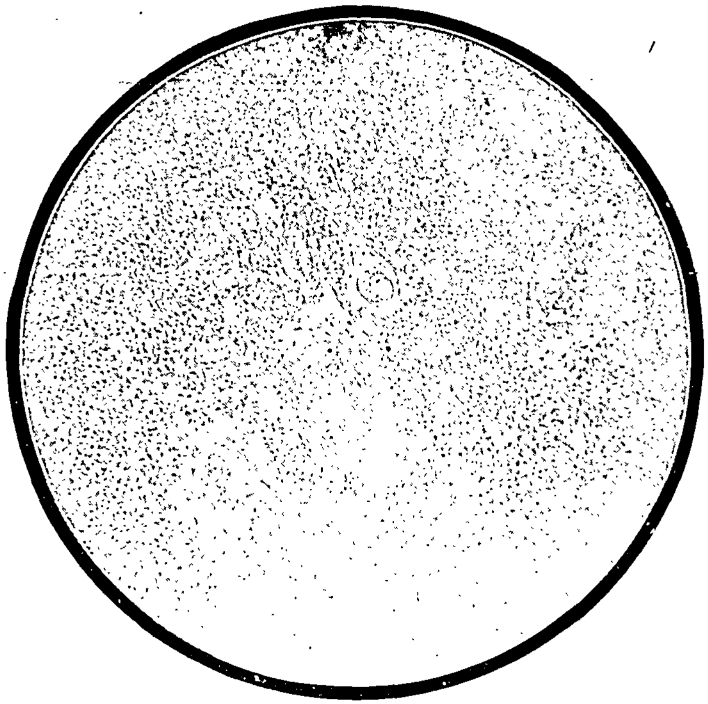


Fig. 15.—(Neoplasm). Epithelioma of pulp.

PROTECTION OF TISSUES AGAINST BACTERIA.

The tissues may be protected against bacteria (1) by exhaustion of the soil or acquired immunity, as one attack usually exempts from a second (example, variola); (2) by chemical products formed, *pari passu*, with the bacteria acting as a poison to the bacteria and preventing their development (chemotaxis). Toxins are repellant, producing a "negative chemotaxis:" (3) By tissue cells collecting around the bacteria and so killing them; (4) by phagocytosis, the cells absorbing and destroying bacteria.

Reaching the Pulp.—The irritant may reach the pulp in several ways: (1) By direct exposure as a sequel to caries, erosion, abrasion, fracture, etc. (2) Exposure of the dentinal tubules through trauma, filling, etc., and transmission by the fibrils of irritating stimuli as acids, metal fillings too close to the pulp. (3) Through the apical foramen as sympathetic depressions which may pass from the seat of injury in one part of a nerve tract and produce symptoms at a different terminal. For example, irritation by pulp stones in the third molar may cause hyperemia of the pulp in a premolar. Pulp stones in a third or second molar may cause a neuritis in the infraorbital nerve at its foramen of such a character as almost to indicate antral involvement. (4) By contact with the periodontium, especially in connection with constitutional effects as infectious diseases, mercurialism, rheumatism, malaria and especially when much arteriosclerosis is present.

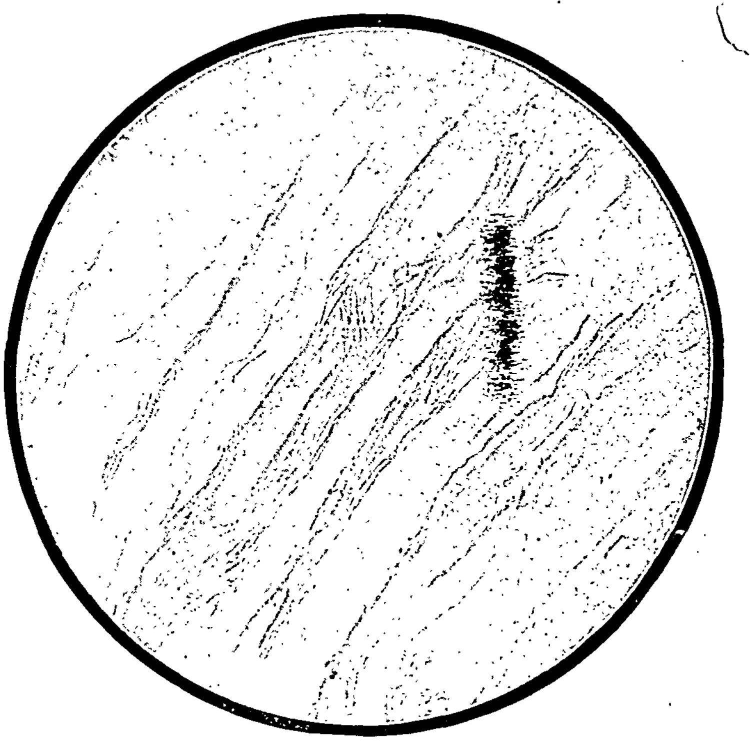


Fig. 16.—Vasomotor system, pulp, nerve degeneration slight, myelin, nodes of Ranvier.

PATHOLOGY.

When any sufficient irritation is present an active hyperemia follows, partial or complete, as in one of the cornua or radicular portions or all (Fig. 1). The cause if quickly removed may result in the pathologic symptoms abating the leucocytic migration stops, the cells are reabsorbed and no evidence is left. This is the so-called. but erroneous, "irritation of the pulp," for irritation is not the actual disease, but the cause. So far as caries is a cause of hyperemia we must recall that clinically we have a difference in the signs as presented by the type of cavities. There is, first, the cavity as seen at the cervical margin due perhaps to chemical erosion or mechanical abrasion, being sensitive to touch and conveying sensations, and, second, the further advanced type of caries, insensitive, which hardly, if ever, admits the slightest impulses to the pulp. If we study the tooth structure in these two classes we shall find different changes as regards the pulp tissue, the odontoblasts and the dentinal-enamel region, with a possible increase of interglobular spaces, and in the odontoblastic zone, an excess of calcoglobulin about the germinal odontoblasts, which latter are increased in number in the hyperemic area. Some cell proliferation is also present, (Fig. 2), showing that Nature is trying to protect herself and to protect the pulp as long as she can, thus cutting off the trophic sensations by increasing the resistance to stimuli and filling in the cavity by new if imperfectly organized tissue. Whether the odontoblasts have more to do with the vasomotor system than with dentinification is as yet an open question, but clinically it would seem as if they have, or at least that they assist more materially.

Pulpitis is the common termination of hyperemia, and histologically the pulp shows very different degrees of interest Cases should be taken from teeth, first, in which caries has not penetrated into the cavity and, second, in which there is exposure. We find in some specimens a well-marked cell infiltration, dilated vessels on account of the stasis of the circulation and evidences of edema which may be seen by the poor staining of the tissues which look water-logged (Fig. 3). This distension shows the clinical evidence of pain by pressure of the odontoblasts against the dentine and the constriction by the alveolar dental membrane through inflammation of the vasomotor nerves scattered through the pulp and constriction of the vessel walls (Fig. 4). The endothelial cells are easily lost by the dissolution of the cement substance, and with the cell changes we obtain clotting, thrombosis and embolism (Figs. 5 and 6). This condition I have often seen in teeth extracted for interstitial gingivitis or pyorrhea.

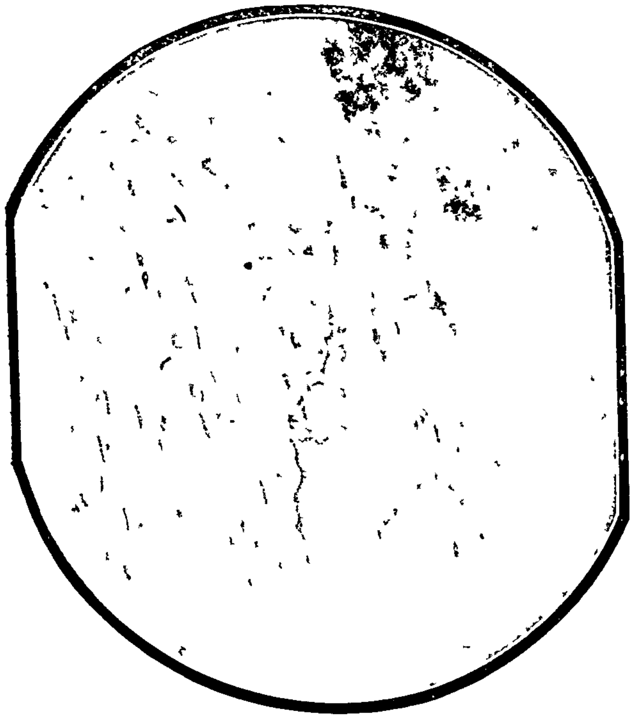


Fig 17—Nerve degeneration, thickened fibers Nuclei well marked

A CASE OF PULPITIS.

Let us take for examination a tooth which has been the subject of periodontitis followed by a pulpitis and then quieted down. Note, first, the thickened membrane and that at certain places there are absorption areas or excavations with large giant cells;[2] in another place in this root are older absorption spots and a layer of new tissue filling them up and increasing the size of the tooth (hypercementosis). The pulp cavity shows that there has been a change in the layer of odontoblasts which form the attachment and act as a source of nourishment from the pulp to the dentine. It is from this layer (the connecting link between the hard calcified dentine and pulp matter) that the so-called secondary dentine is formed, but under certain circumstances the characters of the cells forming this layer change both in size and shape (Fig. 5). If we have a hyperemic condition or slight pulpitis, a great amount of blood is brought to the pulp blood vessels. These cells lose their shape, swell up, the nuclei become active and new cells are rapidly formed by mitosis (Fig. 7). As these new cells proliferate, a thickened membrane-like layer is seen pressing on the dentine and so causing an absorption of the latter in order to gain more room for growth (Fig. 6). Just so long as we have an abnormal blood supply to the pulp, a long or short time of pressure on the hard walls, so long do we have few or many absorption areas which may be superficial or deep. If the tissue is imperfectly calcified around the pulp canal, the giant cells will more easily penetrate and pass out in all directions continuously or intermittingly, depending on what changes are going on externally on the tooth or in its cemental layer. If extracted about this period nothing is found of the pulp or only a thickened membrane on the pulp canal walls These changes are produced by the odontoblast layer of the canal, and if not extracted we find the pulp congested, odontoblasts altered or destroyed and no connection with the tubuli (Fig. 8). In the dentine, giant cells are becoming formative agents, building a new tissue resembling a poor type of dentine, cement or bone-like material with its lacunæ and canaliculi in the en-

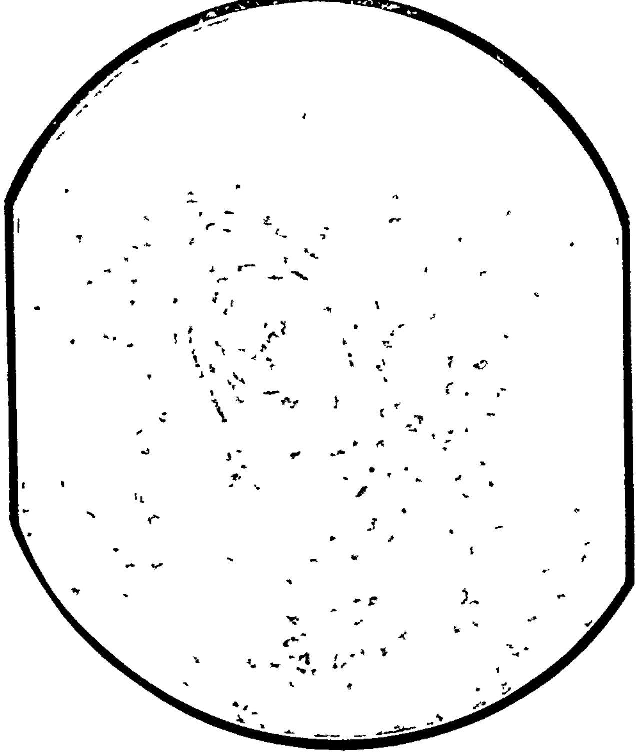


Fig 18—Arteritis obliterans of pulp Parenchymatous degeneration Thickened nerve bundles in pyorrheal tooth

larged pulp, developed from a membrane very similar to that of the periodontium. These same changes may be seen in the incisors of horses, cows and dogs. The vascular system returns to the normal. Clinically the tooth is tender to percussion almost as in periodontitis; this gradually subsides until another inflammatory attack recurs, then interstitial periodontitis with resorption and loosening of the tooth. If this continues we may have to extract the tooth, for through this calcific degeneration we may have many reflex conditions as well as gingivitis, even to suppuration (Figs. 10 and 11).

---

[2] Coyne and Cavallé: Anat. Anzeig., 1905, vol. xxvii, p 205

In the more chronic cases we really see the influence of the defective ways of egress. Everything in the way of pathologic histology which belongs to the retrogressive disturbances of nutrition may occur, as interstitial pulpitis, suppuration, necrosis, gangrene and the various degenerations (Figs. 8 to 13). When a tissue is dead we never hear of its recovering. But just previous to death we may have a line of demarcation in the healthy tissue in the body, as in gangrene of the extremities, but this is a rare sequel in the pulp on account of the peculiar anatomy in the radicular part of the tooth, and because its apical entrance provides no way of egress or ingress. Cases do occur in which cicatrization has been seen both in so-called healed caries and in pulps in which punctures have been made intentionally for hyperemia, or accidentally (Figs. 7 and 14). I feel that as soon as we can secure aseptic or even antiseptic cavities, and tissues, especially in the dentinal tubules, and freedom from enamel fissures we may expect a greater number of pulp recoveries if the patient be in good general health.

As a termination by hyperplasia from a chronic pulpitis we need only note the so-called polypus of the pulp which has been ably studied by von Römer.[3] We all know the comparatively non-sensitive mass consisting of rather thick granular tissue in three layers, the outer having white blood or pus cells beginning to break down, the second the capillary vessel layer and endothelial cells almost like granulation tissue, and the third connective tissue with enlarged vessels and many round cells. He especially noted an entire absence of nerves or only a few nerve fibers. In the pulp cavity itself and in the canals numerous nerve bundles were seen degenerating. Such can be best seen in pulps which have been laid bare by fracture in attempts at extraction and in which the superficial pulp is cicatrizing. The differences between pulp hypertrophy and *pulpitis chronica hypertrophica granulomatosa* as quoted by Rothmund and Arkövy[4] may not exist, says Dr. von Römer. Certainly a growth which follows the type papilloma is usually different to the interstitial pulpitis or fibroid form by having a richer supply of blood vessels more dilated like an angioma and less fibrous tissue.

With regard to the other termination as a possible result of pulpitis, neoplasm or true tumor growth (Fig 15). I refer to my paper in which the literature and work has been discussed.[5] In order of frequency in a series of cases taken from the records of the Dental Hospital of Budapesth (Anton Kozma)[6] it was determined that acute periostitis is rarer than any other inflammatory disease, next maxillary affections. and then acute pulpitis. then follows chronic periostitis and. as borne out by my own histologic studies. chronic inflammation of the pulp, or. as I prefer to designate it, interstitial pulpitis. A peculiar circumstance is that the frequency *of all inflammatory diseases* in the upper jaw increases to the first molar and from thence decreases. The same order also occurs in the lower teeth. It may be said that in the first molar there is hardly any disease that one has not the opportunity of investigating.

If the teeth are considered individually, the inflammatory conditions in the upper premolars, incisors and cuspids occur more frequently than in the corresponding lower ones. But this is not so with the molars, the inferior of which suffer more than the superior, and this corresponds with the statements of Magitot and Kay, J. Tomes, S. Cartwright and Hitchcock.

In studying pulpitis there are specimens in which the most careful work by staining for bacteria does not show them to be present in the tissue of the pulp, more especially in the chronic or interstitial forms. Sections may show the dentinal tubes carrying some, and in others the pulp and odontoblast layers show them and also degenerative changes in the cells themselves. An interesting study could be made by examining sections of the pulp. especially stained to show the probable distribution of the micro-organisms, if they penetrate the basal layer of Weil and the probable routes of invasion into the pulp.

NERVE DEGENERATION.

Nerve degeneration so far has been little worked out in the pulp, but that it is present is evident. The degeneration of a severed nerve is well known in surgical practice, but it is not often remembered that simple contusion may have the same effect as severing the continuity of a nerve trunk. A contusion may abolish the function of a nerve for some hours, but if the function is not restored within a reasonably short time degeneration of the nerve may follow just as if it had been severely injured (Fig. 17). The peculiarity of nerve contusion is that it leads to neuritis and so may give what is really a pressure paralysis owing to the histologic structure.

As we know, a nerve trunk is made up of a number of bundles of nerves, each surrounded by a connective tissue sheath. This strong fibrous sheath plays an important rôle in the pathologic study of neuritis. The nerve has its own lymphatic, vascular supply and a special nerve supply to give it local sensibility. A contusion may, and in some cases does, set up a secondary neuritis. congestion, cloudy swelling, edema and distension of the nerve sheath which is an unyielding connective tissue. and if the inflammation is severe the compression of the nerve fibers gives us pressure paralysis and very soon the nerve degenerates. The symptoms may be obscured at the time of the pain and swelling. Micro-organisms may follow and infect the nerve fasciculi, as they usually arrange themselves along the blood vessel walls.

Whether the odontoblasts have a phagocytic function as suggested by Arkövy[7] is not proved yet. Figures 16 and 17, if compared, show degenerative changes in the ground work and very slight swelling at the nodes of Ranvier, some collection of the myelin substance, while Figure 12 shows a sclerosis, fatty degeneration and (Fig. 17) thickened fibers.[8]

---

[3] von Römer: "Ueber Pulpapolypender Zahne." Correspondenzblatt für Zahnärtze, 1892, vol. xxxi. No. 1, Jan.

[4] Scheff's Handbuch, vol. ii, p. 297.

[5] Latham: "Neoplasm of the Pulp." THE JOURNAL A. M. A., Aug. 20, 1904.

[6] Reported by Prof. Arkövy.

[7] Arkövy: Jour. Brit. Dental Assoc., vol. xv, p. 602.

[8] In addition to writers cited in the text, the following were consulted in the preparation of this article: Andrews, "Calcoglobulin." Dental Digest, December, 1904; Dental Cosmos, November, 1904. Talbott, "Vasomotor System of the Pulp," THE JOURNAL A. M. A., Dec. 9, 1903; "Constitutional Causes of Tooth Decay," Dental Digest, December, 1903; "Pulp Degeneration," THE JOURNAL A. M. A., Aug. 6, 1904, p. 385; "Endarteritis Obliterans and Arteriosclerosis in the Alveolar Process," Dental Digest, 1904; Scheff's "Handbuch," No. 2, p. 297; "Ein Beitrag zur Statistik der Zahn Caries," Inaug. Dissert., Kiel, 1886; Rothman, "Patho-Histologie der Zahnpulpa und Wurzelhaut," 1889; Wedl, "Atlas zur Pathologie der Zahne," p. 68, 1893.

The loss of control of the vascular system of the pulp and obstruction in the vessels followed by inflammation are probably factors in interstitial gingivitis which may be a cause of the gingivæ losing their normal function and so aiding in the progress of the disease (Fig. 17). The interference with the vascularity of the bone, the arteritis obliterans in the pulp and peridental membrane (Fig. 18) producing venous hyperemia of the gums. (acute or interstitial), changes in the mucous glandular structure and functions, and finally atrophy and osteomalacia.

DISCUSSION.

Dr. M. I. Schamberg, Philadelphia, said that for a long time dentists were prone to regard the pulp as merely a bundle of nerves. By the work of Dr. Latham we are made to believe forcibly that there are many pathologic conditions which are prevalent in other parts of the body and at the same time found to exist in the pulp. When he saw Dr. Latham's slides about a year ago he was much impressed with the fact that it would probably be best to remove all pulps which were even closely approximated by decay, if not entirely exposed. He was glad to hear Dr. Latham give evidence of the fact that some of these conditions might be alleviated or improved by the proper treatment, because the conservation of that organ prevents numerous complications which arise when we attempt to fill canals which are very minute and which are extremely important.

Dr. E. S. Talbot, Chicago, said that Dr. Latham held the opinion that it was difficult to say when a pulp is in a healthy condition, or to demonstrate a healthy pulp. It is a singular thing that in the evolution of a pulp from the lower vertebrates up to man, a general degeneration of the pulp occurs, and as we ascend from the lower vertebrates we find that the pulp gradually grows smaller and smaller, until in man the apical end of the root is almost entirely closed, so that we have a pulp mass consisting of blood vessels, nerves and connective tissue inside of the tooth. He believes that the pulp is at its highest physical development when it commences to form dentine. The mere fact of its growing smaller and smaller at that time would lead one to believe that degeneration was going on. Why we ever have a healthy pulp he did not understand. Dr. Latham had demonstrated almost every pathologic condition that is possible to be found in the human body. Ten years ago Ramón y Cajal of Madrid, Spain, found a stain by which he was able to show a nerve-end degeneration, and for the last eight or ten years the members of this Section have been using it along the line of research work. He, himself, had been studying the pulp for the last ten years with Dr. Latham, and some beautiful work had been done showing nerve-end degeneration in the pulp tissue. Arteriosclerosis, as well as fatty degeneration, had been noticed. The question naturally arises then, where so many primary diseases are found in the pulp, is it not better under most conditions to extract or to remove the pulp and to fill the root of the tooth, rather than to try to cap and to preserve it.

Dr. V. A. Latham added that one point was not made plain in regard to pain in teeth after pulp extraction. There are two photographs (Figures 5 and 6) which show the center pulp chamber being occluded by arteriosclerosis and beside that the amount of dentin forming around has practically obliterated the chamber. Six or eight exceedingly minute but distinct pulp canals are seen. This is a case in which one may extract the pulp and think the work is done, but on careful manipulation a condition will still be found to remain, and the patient will return day after day, saying: "Doctor, that tooth still hurts." Dr. Latham had another case in which the nerve, instead of going through the central chamber, actually came through the cemental surface into the peridental membrane. On passing a probe down at the side, pain was felt which nearly made the patient jump out of the chair. After extraction the nerve was found coming out at the lingual side of the tooth, to the gingival margin. It was not a case of hypersensitive cement or dentine as diagnosticated by several. The erratic position of the pulp and its terminal fibers is a matter of considerable importance to stomatologists and physicians in the matter of reflex disturbance.

CEREBRAL DECOMPRESSION.

PALLIATIVE OPERATIONS IN THE TREATMENT OF TUMORS OF THE BRAIN.

WILLIAM G. SPILLER, M.D.
AND
CHARLES H. FRAZIER, M.D.
PHILADELPHIA.

(Concluded from page 853.)

Case 11.—Tumor of cerebellum.

History.—F., aged 16, was referred to Dr. Spiller, July 16, 1904, by Dr. J. S. Baer and Dr. R. G. Curtin. The father of the patient possibly had had syphilis. The menses ceased about two years ago; having begun when she was 14, they had, therefore, been present only a short time. For about one year she had had a severe sensation of pressure at the back of the head, as though some one were pressing her brain out, but this sensation is not felt now. She has had headache, not localized to any one part of the head, and has had "neuralgia" in the left side of the forehead about a year. Before December, 1903, the headache was severe. About a year ago she began to have nausea and vomiting, at first about every six weeks, but these symptoms gradually became more frequent until they occurred every two or three days. The vomiting had no relation to eating. About a year ago she began to be dizzy, but has not been dizzy since February, 1904. Dr. Risley has recently discovered optic atrophy, secondary to choked discs. She has never been unconscious. She has had difficulty in lying on her right side, but this sign seems to have disappeared. Lying on the right side caused her head "to kind of draw." She has never had convulsions. Sight has been fail-

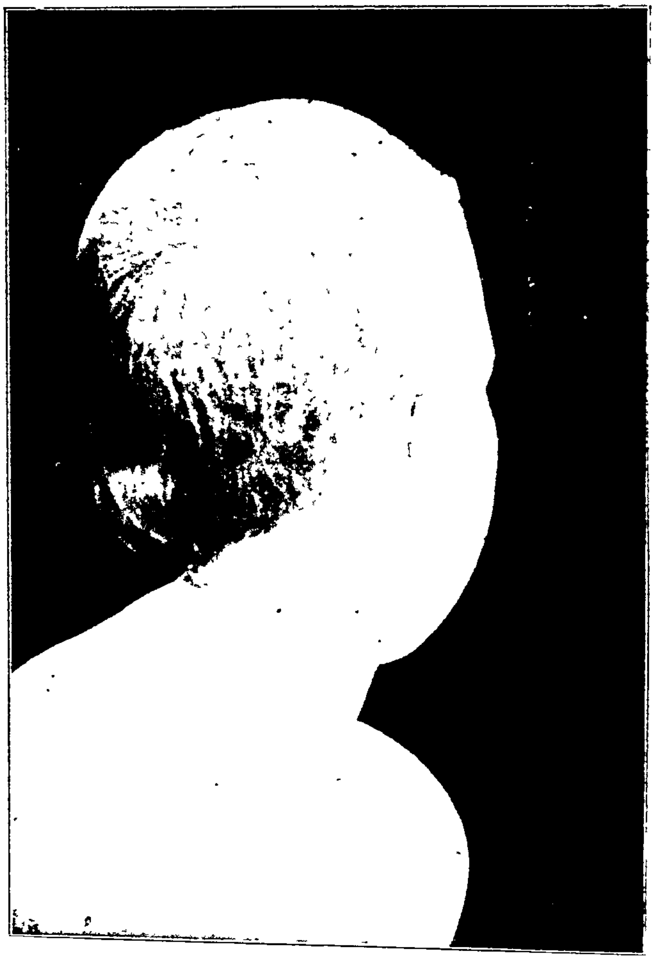


Fig. 4.—Showing a hernia cerebelli after a unilateral suboccipital craniectomy. The patient prior to the operation had been bedridden for over a year, is now able to be up and about and has been relieved almost entirely of her pressure symptoms (Case 11).

ing about two years. Difficulty in walking was noticed about November, 1903; she staggered, and the staggering seemed to be more to the left.

Present condition, July 16, 1904: There is no involvement of either seventh nerve masseter contracts well on each side, tongue protrudes straight, not atrophied and shows no fibrillary tremors. Movements of eyeballs are free in all directions, but distinct nystagmus is observed in turning the eyes far to the left or right, and probably is more intense in turning the eyes to the right. The right pupil may be a trifle larger than the left. The reaction of the pupil to light is preserved, also in convergence. Accommodation can not be tested because of poor sight. She can count fingers with either eye, but the sight is more impaired in the left eye. She hears a low-ticking watch one or two feet from either ear, and has not noticed any deafness. She has had buzzing in both ears, especially in the left, but Dr. Baer states that she has had accumulations of wax in the ears. The face is somewhat puffy and expressionless. The exit points of both fifth nerves are sensitive, but the left supraorbital foramen is more sensitive than the right. She now holds her head straight, but says she formerly inclined her head to the left. Sensations of touch and pain are normal in each side of the face.

Upper Limbs: All the movements are free; the grasp of each hand is normal. The biceps and triceps reflexes are not distinct on either side. Sensations of touch and pain are normal in each upper limb. The finger-to-nose test with eyes closed does not show distinct ataxia.

Lower Limbs: Voluntary power is normal. The patellar reflex may be a little prompter than normal on each side. She staggers a little when standing erect with eyes closed, and the gait is uncertain, with a tendency to stagger more to the left. The gait is cerebellar in type, but the staggering is not intense. The Achilles jerk is not distinct on either side, nor is the Babinski reflex. Sensations of touch and pain are normal in the lower limbs.

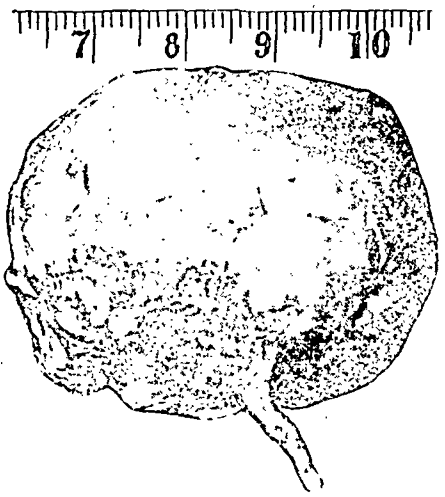


Fig. 5.—Fibroma removed at operation (Case 12). The patient lived five days after this operation.

Dr. W. H. Powell first examined the eyes in November, 1903. Vision of the right eye, 20/50; of the left eye, 20/50. Pupils react to light and accommodation. Peripheral vision normal, media clear, but fundus suggests a low grade of neuritis. In July, 1904, vision of the right eye was 20/100, of left eye 4/200, and she had optic atrophy and markedly contracted fields.

Chiefly because of the history of probable syphilis in the father I employed mercury and iodid, and by Aug. 16, 1904, her gait had become less ataxic. By May 5, 1905, headache had disappeared, but about once a month she still had a drawing sensation, as though the brain were being pulled out. Ataxia was slight. The patellar reflexes were about normal.

Feb. 22, 1906, Dr. de Schweinitz found typical postpapillitic atrophy.

Operation.—March 9, 1906, suboccipital craniectomy was performed by Dr. Frazier under ether anesthesia. The operation consisted in removing that portion of the occipital bone overlying the left cerebellar hemisphere.

Subsequent History.—March 28, 1906: Since the operation was performed the condition of the patient has improved, but only to a moderate degree. The pain referred to the arms has been very much less severe and at times she has had none at all. Her headaches also have been less severe and less frequent. Although confined to bed for the past year, she is now able to get up in a wheel chair. Although the dura was neither incised nor removed at the operation, there is quite marked bulging over the left cerebellar hemisphere, showing that the dura has yielded to the pressure from within and that it is possible for a hernia to develop without opening the dura.

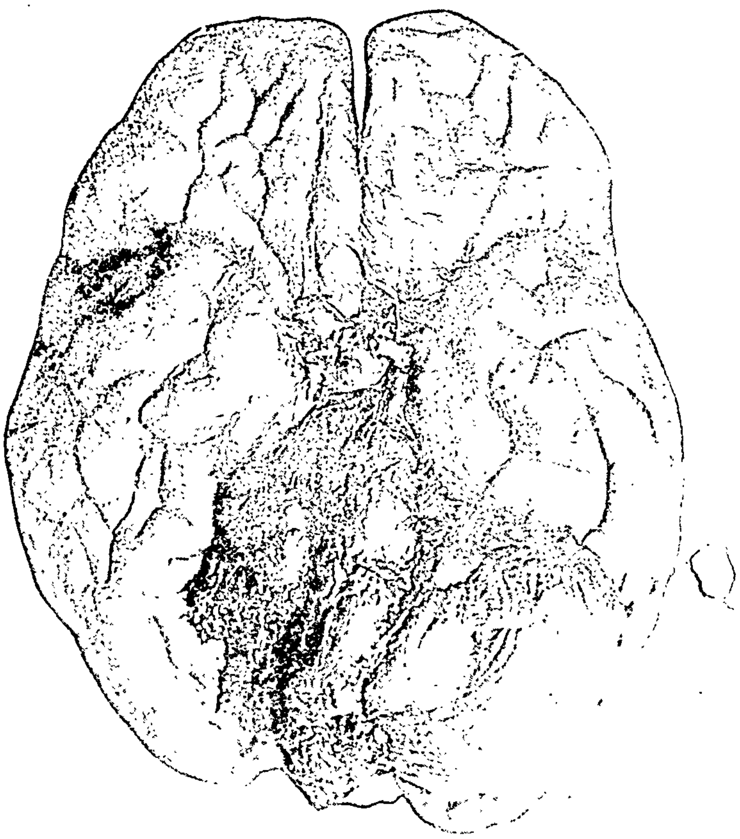


Fig. 6.—Brain from Case 12, showing portion of tumor in right cerebello-pontile angle not removed at the operation.

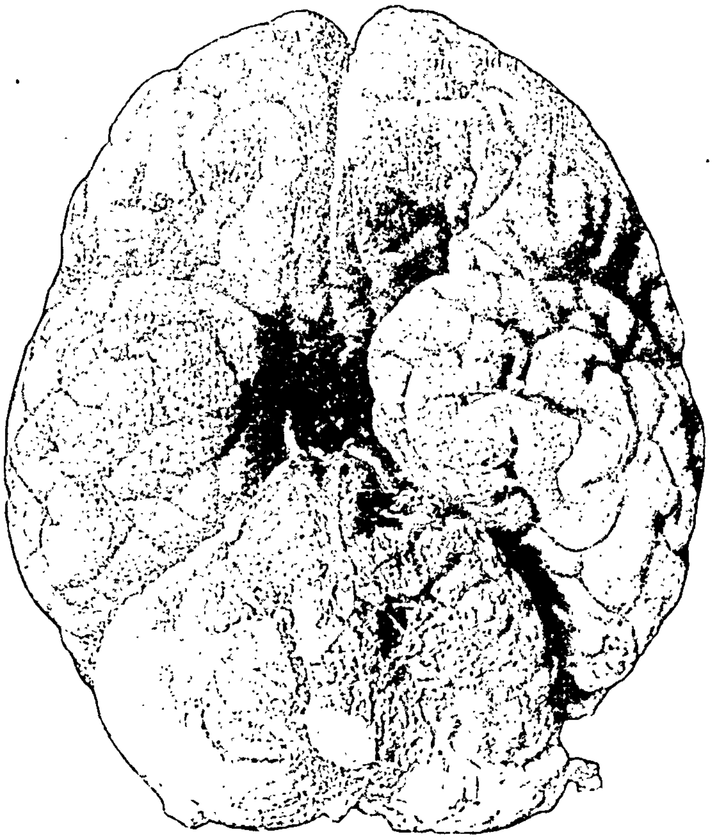


Fig. 7.—Tumor, probably a fibroma, of the left cerebello-pontile angle (Case 14).

Second Operation.—April 4, 1906: After consultation with Dr. Spiller it was decided that, owing to the fact that the headache and pain in the arms had not been entirely relieved, it would be advisable and afford greater relief to the increased tension to split the dura. Following an injection of 1-6 gr. of morphin, and under ether anesthesia, the left cerebellar hemisphere was exposed by a muscle-splitting operation. A vertical incision was made through the middle of the original flap, the edges of the wound retracted and a crucial incision made in the dura about 1½ inches in either direction. The cerebellar tissue bulged considerably through the opening, but the exposed tissue was normal in appearance. The musculo-aponeurotic layers of the wound were closed with catgut sutures and the scalp with interrupted silkworm gut sutures.

April 16, 1906: The following notes were made by Dr. Spiller: The paralysis in the lower distribution of the right facial nerve supply is distinct, although the upper distribution of the nerve does not seem to be affected. She has light weakness of the right upper and lower limbs. The patellar reflex is prompt on each side, but more prompt on the right, and there is slight tendency to ankle clonus on the right side. The Babinski sign is present on the right side, but uncertain on the left side. There is no disturbance of sensation for touch or pain in any part of the body.

May 23: For the first few weeks after the second operation the patient had occasional headaches and pain in the upper extremities. For the past two weeks, however, she has been almost entirely free from both these symptoms. She has gained in strength and is able to be up a considerable portion of the day. A hernia cerebelli has increased somewhat since the second operation (Fig. 4). She has recovered sufficiently from the effects of the operation and is sufficiently relieved to warrant her being discharged from the hospital. Her gait is still ataxic. She menstruated in May, 1906, the first time within a period of four years.

Case 12.—Cerebellopontile tumor. Decompressive operation, followed by disappearance of headache, vomiting, and by subsidence of choked disc.

History.—E. D., aged 24, was referred to Dr. Frazier by Dr. Sherman Voorhees, of Elmira, N. Y. She was seen in consultation also by Dr. Spiller. About two years ago the patient noticed that her limbs were weak, that she would stagger in walking, although she did not feel dizzy. About one year ago she began to notice that her vision was failing. At this time she would have attacks, when for a few minutes everything before her would seem black; following the attacks she could see perfectly well again. At the same time she began to have attacks of nausea and vomiting, and noticed that she was becoming slightly deaf in her right ear. For the past three months she has had considerable headache, sometimes dull, at others sharp and shooting in character. At the time of her admission, Feb. 16, 1905, she is practically blind and unable to walk.

Examination.—February 17: It was noticed that in showing her teeth the right corner of the mouth is not drawn up nearly so well as the left, and in drawing up each corner separately the movements on the right side are distinctly less than the left. On closing her eyelids forcibly the resistance to passive movements is less on the left side than on the right side; the masseter muscle seems to contract equally well on one side as on the other. The ocular movements are normal and there is no distinct nystagmus. There is no disturbance of pain and tactile sensation in the face, although she complains of a "queer" feeling on the right side of the face and right side of the mouth and of the face feeling numb, as though it were asleep. Further examination gives the impression that both the left temporal and masseter muscles contract a little more than the right, although it was subsequently found that on both sides the muscles respond equally well to Faradic current. The tongue is protruded straight and there are no fibrillary tremors. The right eyelid seems to be slightly more prominent than the left.

In the upper extremities the grasp of each hand is normal. Biceps reflex is normal on each side; the triceps reflex and wrist reflexes are not distinct on either side. Sensations for touch and pain are normal on both sides. There is slight ataxia on each side, a little more on the right.

In the lower extremities the patellar reflex is a little prompter than normal on both sides. There is no ankle clonus. The Babinski sign is uncertain in each side, as she resents any attempt to irritate the sole of the foot. The Achilles jerk is absent on both sides; there is no hemiasynergy and no weakness of any of the limbs; gait is slightly ataxic, specially noticeable when she turns; in walking the patient staggers more to the left than to the right. She staggers when her feet are together almost as much when her eyes are open as when they are closed.

Examination of Ear: Dr. Randall finds little hearing in the right ear by air or bone, except for the Galton whistle. Tests are slightly contradictory, but indicate middle ear trouble on the right side, complicating semi-complete right acoustic paresis. Hearing on the left side is not impaired.

Ophthalmic Examination by Dr. Shumway: Pupils are dilated; right pupil responds when light is thrown in from the temporal side, in which position it is recognized. The left pupil does not respond to light and the eye is blind. There is choked disc on both sides; elevation on the right side is about 6 D. and on the left 7 D. The nerves are beginning to atrophy. The eye movements are carried out in a jerky manner, the muscles acting feebly, and the eyeballs return to primary position immediately. There is no paralysis of the ocular muscles.

Operation.—February 23: Under ether anesthesia Dr. Frazier performed a suboccipital craniectomy, removing the bone overlying the right cerebellar hemisphere. Owing to the fact that bleeding was so profuse, it was decided to discontinue the operation at this stage until the patient had fully recovered from its effects.

A radical operation was performed two months later and was followed by death within five days (Figs. 5 and 6). After the decompressive operation the choked disc subsided from 7 D. to 3 D., although, unfortunately, the optic atrophy was so advanced that it precluded the possibility of restoring the vision. The hearing improved somewhat after the operation and the nausea and vomiting ceased. Headaches disappeared almost entirely and the patient was able to get up and walk about the ward with but little assistance.

Case 13.—Inoperable tumor of brain. Decompressive operation, followed by little or no amelioration of the symptoms, although prolonging the patient's life.

Patient.—R. C., aged 30, was referred to Dr. Charles H. Frazier by Drs. Thomas O. Nock and Wharton Sinkler, March 15, 1906, the latter having seen the case in consultation.

History.—There was a history of the patient having had an attack of vertigo while walking about three months ago, and had she not been caught by her husband she would have fallen to the ground. At the same time she had some numbness in the left upper and lower limbs. Since that time she has had two attacks of numbness of the limbs, but no vertigo. She has had more or less persistent headache for the past year, occurring about three or four times a week, usually in the mornings. There have been no convulsions. Three weeks ago the symptoms became much more severe, headache more intense and numbness in the left extremities more marked. At this time it was noticed that the muscles of the left side of the face were gradually becoming weak, the muscles becoming paralyzed within a period of from four to five days. Up to this time there was no weakness in the extremities, but about a week after the involvement of the facial muscles was noticed the grasp of the left hand became weak, and about the same time weakness was noticed in the left lower limb. The upper extremity sometimes is flaccid, at other times spastic, but the lower extremity has never been spastic. The pulse has varied between 44 and 60. The respirations have been alternately shallow and moderately full, the respiratory rate ranging from 16 to 30 a minute. For the past four or five days her temperature has been subnormal. About eight days ago for the first time the patient became stuporous for variable periods of time. These periods of stupor have gradually increased, and during the past two days the patient has been almost comatose. This condition of mental hebetude was first noticed about two weeks ago.

Examination.—March 15, 1906, by Drs. Nock, Sinkler, Frazier and Spiller: Stupor is so great that the patient can be roused but slightly. She lies in bed with her head turned to the right, but there is no deviation of the eyeballs. There is no tenderness on percussion of the scalp. She is able to move the eyeballs well to the right, although there may be slight impairment of the left eyeball to the right, but probably not of the right eyeball to the left. The right pupil is larger than the left. Neither pupil reacts to light. It is impossible to tell whether there is any deviation of the tongue or to test the muscles of mastication.

Left Upper Extremity: The left extremity is very weak, although she has a little voluntary power in it and can flex the limb feebly at the elbow. She can not make a fist with the left hand. The biceps tendon and triceps tendon reflexes are present, but weak. Sensation is not disturbed.

Left Lower Extremity: The lower extremity is very weak, although she can move it slightly. The patellar reflex is present on the left side, but not very prompt. The Achilles tendon reflex is present on each side and about normal. There is no ankle clonus and the Babinski sign is very typical on the left side, as it is on the right, although not so pronounced. Pin prick is perceived in the left lower limb.

Examination of the Blood: Systolic pressure, 165; hemoglobin, 65 per cent.; white blood corpuscles, 21,240.

Urinalysis: There is slight albuminuria, no sugar and a few granular casts.

Ophthalmic Record by Dr. de Schweinitz: This examination was made a week or more before the patient came to the hospital and disclosed a moderate optic neuritis of each eye, most marked on the right side. There are also a few hemorrhages in the neighborhood of the optic disc. The neuritis appears to be in an early stage of its development; on the left side it is just beginning. The pupil reacts normally. There appears to be a divergent strabismus, usually more marked on the right side and probably dependent on paresis of the right internal rectus. Some examinations appear to indicate that there was failure in the movement of the eyeball upward, therefore some involvement of the right superior rectus. This was not certainly determined, as there did not appear to be much difference between the two sides; both lids droop to about an equal extent, but the droop is one probably due to weakness and not to paresis. The visual field, roughly taken by the hand, appeared to be undivided; at least there was no hemianopsia.

Operation.—March 15, 1906: The date the patient was admitted to the hospital an osteoplastic operation was performed, in which the motor region was exposed. It was noticed when the flap was reflected that there was some bulging of the dura at the lower and posterior angle of the opening. An exploratory incision about 1½ inches long was made at this point, at which the dura seemed very much thinner, as though undergoing atrophy from pressure. The brain contents bulged through the opening thus made, and an exploratory canula was introduced for about 1½ inches, as there was some reason for suspecting the presence of an abscess. It seemed as though the canula entered a cavity; at first some brownish fluid flowed from the canula and afterward pure blood. The exploratory incision was made about one-half inch behind the anterior margin of the opening and a small section of tissue removed for examination. Concluding the lesion was a subcortical one, we decided to discontinue any further exploration. A considerable portion of the bone in the flap was removed and the dural incisions and the incisions in the scalp closed.

From the date of the operation until the time the patient left the hospital, ten days later, the patient manifested but little, if any, improvement as a result of the operation. There were times when she seemed to be a good deal brighter than she had been in the immediate past, and also times when she had a little more movement in the left upper extremity. Mental condition, on the whole, was better, but apart from this there was very little, if any, change. It might be noted that the leucocytosis which existed before the operation continued afterward, and at one time the white-blood corpuscles numbered 36,000. In a differential count that was made March 25, 1906, there were 94 per cent. of polymorphonuclear cells. The persistent leucocytosis in the absence of any wound infection was strongly suggestive of the presence of an abscess.

Postoperative History.—May 24, 1906: A letter recently received from the patient's physician, Dr. Nock, says that her present condition is about the same. There is complete paralysis in the left upper and lower extremities, and now gradual weakening of the muscular power in the right arm and leg. When awake the patient talks intelligently and is interested in what is going on, although there is a tendency toward confusion of ideas at times. Her appetite is good and she takes enough food to maintain her nutrition. Her temperature varies from 99 to 99.3. Pulse is regular.

We include the following case, which was in the service of Dr. Mills and Dr. Martin and was studied also by us:

Case 14.—Stafford, male, aged 46, was under the care of Dr. C. K. Mills in the University Hospital in 1902. He was seen also by Dr. Potts and Dr. Spiller.

The patellar reflexes and Achilles tendon reflexes were lost; the gait was ataxic. Headache, dizziness, optic neuritis, nystagmus and paresthesia of the left side of the face were present among other symptoms. The diagnosis of cerebellar tumor was made. A palliative operation over the cerebellum was performed by Dr. Edward Martin in 1902. The patient's condition was much improved. He died in 1906 and a tumor was found in the left cerebellopontile angle (Fig. 7).

THE PRESENT STATUS OF BRAIN SURGERY.*

M. ALLEN STARR, M.D., LL.D.
Professor of Neurology, Columbia University.
NEW YORK.

It is twenty years since the first operations on the brain for the relief of tumors, epilepsy, and abscess were undertaken, and the data for final conclusions in regard to the propriety of such operations in various conditions are now available.

The enthusiasm with which these operations were performed at the outset has subsided and it is now possible to take a broader and calmer view of the entire subject; to realize the limitations of such operations; to appreciate their true value and to determine with considerable exactness the class of cases in which brain surgery promises success.

In this review I shall endeavor to present conclusions derived from an extensive experience in this field, and when statistics are cited too great stress will not be laid on them, as I realize that very many cases, both of a favorable and unfavorable kind, have not been published. I shall take up in succession the surgical treatment of epilepsy, of brain abscess, of brain tumor, of cerebral hemorrhage, and of operations for the relief of imbecility and idiocy.

I. SURGICAL TREATMENT OF EPILEPSY.

The cases of epilepsy which are open to surgical treatment are those in which it can be determined that there is a localized focus of disease in the brain, which acts as a starting point for irritation, and thus causes the epileptic attack. Such a local focus of irritation may be caused by an injury to the head, in some cases producing fracture of the skull, but in many cases not attended by external evidences of injury. It may also be produced by internal causes, such as the growth of small local inflammation of the meninges. A plaque of sclerosis in the brain, the origin of which may be wholly unknown, is capable of producing epilepsy and our experience in the treatment of abscess and tumor has shown that the necessary cutting of the brain for the relief of these diseases is liable to result in the production of gliomatous scar tissue which subsequently becomes a focus of irritation leading to epileptic attacks.

The essential difference between epilepsy produced by these local lesions and idiopathic epilepsy consists in the fact that in the cases open to operation the epileptic fit is uniformly preceded by a single kind of aura, either a sensation of numbness in one extremity, or an hallucination of sight, sound, smell, or taste, or by a sensation of muscular twitching, which is immediately followed by a localized spasm confined at first to one extremity, or to one side of the face, and extending (if it does extend) in a definite manner to the other parts of the body. The fit is rarely attended by a loss of consciousness. Such a localized epilepsy, generally recognized as Jacksonian epilepsy, is always due to a definite focus of disease in the brain. Furthermore, this disease is cortical, and hence accessible to the surgeon, and by following the well known guides to localization such diseases can be excised either from the meninges or from the cortex when these parts are laid bare.

---

*Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

It must be distinctly stated that these are the only cases of epilepsy which are open to a cerebral operation. Epilepsy is a widespread disease among the community, one person in five hundred being affected. In my experience not more than 2 per cent. of the cases of epilepsy are in any way open to operation, the other 98 per cent. presenting none of the characteristic symptoms of localized disease in the brain. It is useless to trephine in idiopathic epilepsy, even though it may have been apparently caused by a fall or blow on the head, unless the attacks present the characteristics here named.

The prognosis in the cases of focal epilepsy open to operation is not so favorable as was at first anticipated. Even when a focus of disease can be excised from the brain, a cyst removed, or a plaque of adherent meninges loosened and taken away, some cicatrix is inevitably left, and this too often remains as an adequate focus for the recurrence of the epilepsy. In only about 20 per cent. of the patients operated on has permanent cure been the terminal result. In very many cases relief for a certain time has followed the operation, but after one, two, or three years these patients have returned with a renewal of the symptoms, and second and third operations have not been followed by permanent cure. Such unfavorable results might possibly lead to the conclusion that in the majority of these cases of focal epilepsy an operation should be refused. As a matter of fact, however, it is often found that the focal epilepsy is the first symptom of the growth of a tumor, or the development of a cyst in the cortex of the brain. And if the histories of cases of brain tumor are carefully studied it is surprising to see in how many cases focal epilepsy was the earliest sign of the development of this disease. It seems imperative, therefore, to operate in these cases of focal epilepsy as soon as the diagnosis is made: First, because of the possible relief of epilepsy, and, secondly, for the possible discovery of a more serious and fatal disease just beginning.

I have had operations performed for the relief of epilepsy of a focal nature in about 60 cases. In a few of these cases conditions have been met at the operation which rendered any relief impossible. In a few of the cases (about one-fifth), a permanent cure has been obtained. In the remainder the epilepsy has returned and has been in no way affected by the operation. I have seen many cases of ordinary idiopathic epilepsy, supposed to be due to a blow on the head, operated on, the blow having left some scar that has guided the surgeon. I have never seen in these cases any tangible disease in the brain when it was exposed, and I have never seen any improvement or relief from the epileptic attacks.

A review of this experience convinces me that the operation of trephining in epilepsy is of very limited application and is only to be recommended in a few selected cases which present the necessary guide to both physician and surgeon.

Case 1.—This is a good example of Jacksonian epilepsy in which the finding at the operation justified surgical treatment.

Patient.—A boy, aged 10, began to suffer from attacks consisting of tingling and numbness beginning in the right wrist and passing up the arm, invading the right side of the face. He then felt unable to speak, would feel weak in the arm and drop anything he was holding, and occasionally he would have some twitching of the entire arm. He did not lose consciousness and the entire attack was over within five minutes. Such attacks continued at frequent intervals until the age of 23, when at my suggestion an operation was undertaken by Dr. Hartley.

Operation.—On exposure of the brain a firm adhesion between the dura, pia and cortex about the junction of the middle and lower third of the anterior central convolution was found, and as the brain at this region was manifestly hard after the membrane had been stripped off a portion of the cortex, ½x⅝ in. in size was cut out. The Faradic current was applied to the cortex in this region and produced movements of the wrist, elbow and shoulder, and above the shoulder area it caused movements of flexion of the trunk and back towards the right side; this being a complete confirmation of Sherrington's localization of the trunk centers at the junction of the middle and upper thirds of the anterior central convolution in the orang. It was evident in this case that the localized sclerosis of the cortex and adhesion of the meninges to it, probably the result of some unrecorded fall in childhood, had for many years existed as a cause for the Jacksonian epilepsy, and it was also evident that nothing but an operation would have given radical relief. I had recommended the operation when the boy was 11 years old, but it took twelve years of useless medical treatment to convince the parents of its necessity.

II. THE SURGICAL TREATMENT OF ABSCESS OF THE BRAIN.

Abscesses of the brain of traumatic origin, following injuries or fracture of the skull when located in parts of the brain, diseases of which produce definite cerebral symptoms, can usually be diagnosticated without much difficulty, and should be operated on early. In cases of fractures of the skull or concussion of the head, followed within two or three weeks by the development of symptoms suggestive of abscess, it is imperative to trephine even though the indications are purely those of a surgical kind, there being no localized cerebral symptoms, for there are many districts in the brain, disease of which does not produce known effects. Patients with abscess of the brain developing subsequently to chronic otitis media, should be operated on as early as it is possible to make the diagnosis.

The diagnosis of abscess of the brain is comparatively simple in cases in which the usual causes have preceded the development of cerebral symptoms. Headache, vertigo, vomiting, slow pulse, marked change in the mental state, sensations of dullness and hebetude, slowness of thought, irritability of temper, defective memory and depression, tenderness of the head to percussion, irregular pupils and optic neuritis, constitute sufficient evidence of a cerebral complication. When meningitis occurs, as a rule, lumbar puncture will reveal an increased number of leucocytes in the cerebral spinal fluid, and the existence of micro-organisms in that fluid. Lumbar puncture, therefore, is an important means of differential diagnosis between meningitis and cerebral abscess. Examination of the blood is also a means of diagnosis, for a sudden and great increase in the leucocytes is an indication of a cerebral complication, and the leucocyte count in meningitis is usually higher than that in abscess. As soon as the diagnosis of a cerebral abscess is made, under any circumtances it is imperative to operate. And while the percentage of recoveries from the nature of the case is at present only about 60 per cent. in statistics I have collected[1] covering about 500 cases, yet there is every reason to believe that in cases that are diagnosticated early and the operation is undertaken as soon as the diagnosis is made, the percentage of recoveries will be much greater.

III. THE SURGICAL TREATMENT OF TUMORS OF THE BRAIN.

The diagnosis of brain tumor is usually easy from the combined presence of headache, worse on waking, vomiting of a projectile type, not connected with the taking of food, and worse on waking, vertigo developing on change of position, optic neuritis and mental dullness. When to these symptoms there are added either Jacksonian epilepsy, paralysis at first limited to one limb and extending to other parts, some form of aphasia, hemianopsia, astereognosis, cerebellar staggering and sudden loss of balancing power, or the combination of cranial nerve symptoms due to involvement of the tissues on the base of the brain, the diagnosis of the position of the tumor is reasonably certain. In these cases operative interference may be warranted. In the far larger number of cases in which localizing signs are absent operation promises nothing.

A careful review of a large number of cases of brain tumor, examined postmortem, shows that about 10 per cent. of tumors are open to surgical treatment. The most recent statistics of results in such cases have been published by Dr. Philip Coombes Knapp,[2] whose tables I reproduce, as they are most instructive. Of 828 tumors operated on up to July, 1905, it was found that in 471 cases the tumor was found and removed; in 189 cases the tumor was not found, in 104 cases the operation was a palliative one only, and in 64 cases the tumor, though found, could not be safely removed. Further analysis of the cases, 471 in number, in which the tumor was removed, shows that the diagnosis was correct, the removal easy, and the recovery or improvement most satisfactory in those cases in which the tumor lay near the Rolandic or Sylvian fissures, while the mortality was greatest in the cerebellar cases.

RESULTS IN OPERATIONS FOR TUMORS OF THE BRAIN.

	Recovered.	Improved.	Not improved.	Died.	Result not stated.	Total.
Removed	112	122	78	123	36	471
Not found	4	24	61	87	13	189
Impossible	0	11	11	40	2	64
Palliative	0	48	36	15	5	104
Total.	116	205	186	265	56	828
Frontal	15	6	3	8	2	34
Central	52	82	43	54	5	236
Parietal	7	5	5	12	0	29
Temp.	2	4	6	5	1	18
Occip.	3	3	2	2	1	11
Cerebellum	7	16	8	23	1	55
Not stated	26	6	11	19	26	88

These statistics are quite in accord with my own experience. It is evident then that out of 100 brain tumors we may expect success in surgical treatment in but five only. Yet there is no doubt that even if the number of lives saved is small it is our duty to study every case with our minds fixed on the question of possible surgical relief.

It has been proposed by Horsley and recently urged by Cushing, that in inaccessible tumors some relief of symptoms may be attained by making a large opening in the skull for the relief of pressure. In one of my patients recently operated on by Cushing the removal of two portions of bone over both lobes of the cerebellum, has apparently cured the child, the blindness has subsided, the headaches have ceased, and although he staggers some still in walking, he lives in comfort and is able to go to school, while at the time of operation in July, 1905, he was at the point of death. Such cases encourage one to believe that palliative operations are justifiable. It is only right to state that I have seen two other cases in which they did not succeed.

Case 2.—This case shows the importance of early operation in brain tumor.

Patient.—In January, 1905, a healthy business man began to suffer from severe frontal headaches, sometimes attended by vomiting, and it was soon noticed that he misplaced words and had difficulty in expressing his ideas. These symptoms increased steadily during February, and early in March he had a temporary attack of right hemiplegia and aphasia, which, however, passed off entirely in two days, but left his speech more defective. This was followed by recurring attacks of twitching in the right hand and in the right side of the face, attended and followed by numbness in these parts. By the middle of March his speech defect had become constant an he could no longer write, though he could read; and he had become very dull and drowsy.

Examination.—On March 25 he went into a semi-stuporous state in which I first saw him. I found an extreme choked disc in both eyes, worse in the left; no paralysis, but a flatness of the right side of the face and increased reflexes in the right limbs. I concurred in the diagnosis of brain tumor made by his physician, Dr. Rutz, and located the tumor in the left third frontal convolution, and recommended operation.

Operation.—On March 27 Dr. Hartley operated, making a large bony flap over the left ear four inches in diameter. When the dura was opened the tumor was visible, lying in the middle of the third frontal convolution. It was easily shelled out by a spoon, and some small discolored parts of the white matter of the brain about it were also taken out, leaving a clean cavity.

His recovery was rapid. The day after the operation he was still speechless, but within a week he had regained his speech, could read aloud, and could write, and had no paralysis. On April 16 he was up and the wound had healed. On May 16 he went back to business in apparently good health. In November, 1905, he had had no return of brain symptoms.

IV. SURGICAL TREATMENT OF CEREBRAL HEMORRHAGE.

In cases of extradural hemorrhage following contusions or fracture of the skull the slow development of symptoms of intracranial pressure, slow pulse, steady rise in the blood pressure, deepening coma, Cheyne-Stokes respiration, and increasing hemiplegia, afford sufficiently clear indications for trephining. The symptoms develop within six hours of the injury. It is usually from the middle meningeal artery that the hemorrhage occurs; hence it is the area just above the ear which is to be exposed, a large trephine opening or a large bony flap being made. All surgeons of experience have treated such cases successfully, and the literature is full of reports of clots removed, with recovery.

It requires much courage to suggest an operation in the head in a patient who is comatose from an apoplexy. A considerable number of these patients recover, at least in part, when left alone, and the depth of the coma, or the degree of the paralysis affords no indication during the first twenty-four hours, of the eventual result. It is due to Harvey Cushing to state that he has applied successfully in hospital cases the test of the condition of the pulse tension in determining the need of surgical intervention to prevent death. When the blood pressure

---

1. N. Y. Med. Rec., March 10, 1906.
2. Knapp: Boston Med. and Surg. Jour., Feb. 1, 1906.

rises steadily to 250 mm., measured on the Riva Rocci apparatus, in a case of apoplexy, and coincidently with this rise there is a slow pulse falling to 50 a minute, we may say that the case will be fatal. It is in such a case that we are justified in resorting to surgery.[3] The object in view is to relieve the intracranial pressure. This is to be done by turning down a large bony flap or making a large fenestrum in the skull, irrespective of any attempt to find or to remove the clot. The best place to open is over the motor area on the side opposite to the paralysis, for in some cases the clot may be found there. The dura is to be exposed and divided. If the clot is on the surface it will then be seen. If the clot is within the brain the brain will bulge and division in the depth of a fissure may succeed in reaching and evacuating the clot. Even if the clot is not found and removed the relief of the intracranial pressure stops the alarming symptoms and recovery is much hastened, as Cushing's cases have proved. The pulse tension falls as soon as the skull is opened. The pulse becomes more rapid, Cheyne-Stokes respiration ceases, and consciousness soon returns. The operation thus saves life in a formerly hopeless condition.

There is another class of cases of cerebral hemorrhage n which Cushing has also operated successfully. A cerain number of infants are born in a state of asphyxiaion. and it is evident that the delayed or difficult labor has caused not only a large caput succedaneum, but an intracranial hemorrhage, either extradural or intradural. Lumbar puncture usually shows a bloody cerebrospinal fluid in these cases. These infants usually die, or if they live they will remain hemiplegic, idiotic, or epileptic all their lives. a burden to their families or to the community. Any measure for their relief is justifiable. It is comparatively easy in a newborn infant to expose the brain by opening the sutures of the parietal bone with scissors. This operation has been done in asphyxiated paralyzed infants. when the ordinary methods of resuscitation have been applied in vain; large clots. both extradural and intradural, have been found and removed, and recovery has followed. The child's life is saved and the brain in its gradual development throws off the effects of the temporary pressure.[4] It seems true that the success of Cushing in these cases warrants us in urging on obstetricians their duty to consider this operation in asphyxiated infants. It is they who see these cases, and if they can be persuaded that delay in them is dangerous, and the prospect of relief is good, the percentage of idiocy and hemiplegic epilepsy will surely be reduced.

The last class of cases of cerebral hemorrhage open to trephining is the class in which the hemiplegia or aphasia or hemianopsia develops slowly after an injury and does not come to its height for three or four days. In these cases it is probable that a surface hemorrhage has been due to the injury of a vein of the pia mater. A lumbar puncture will reveal bloody cerebrospinal fluid. The symptoms may increase and threaten life, as shown by the slow pulse, Cheyne-Stokes respiration, and increasing blood pressure, or they may come to a standstill. leaving the patient permanently incapacitated. In either case surgical treatment is indicated. I believe the case reported by Dr. McBurney and myself in 1889,[5] of the successful removal of a clot from the lower third of the fissure of Rolando, was one of the first of this character. The man was a physician who was thrown from his buggy, and in the course of three days after developed a motor aphasia and right hemiplegia. The operation was done four months after the injury. The clot was found semifluid and organized, and was easily taken out. His recovery was progressive, and he eventually returned to his practice, though he remained slightly hemiplegic until his death in 1897. I could cite many other cases equally successful.

V. SURGICAL TREATMENT OF IMBECILITY.

It will be remembered that much interest was excited as far back as 1891 by some results reported by Lannelongue in which he had attempted to cure imbecility due to microcephalus by making large exsections in the skull and thus allowing for an increased expansion of the brain. A wide segment of bone was cut from the frontal through the parietal to the occipital region on both sides, and in some cases the parietal bones were pried out a little, thus giving ample space for the brain to grow. Lannelongue reported these cases from the surgical standpoint as recoveries, intending to imply that the children had survived the operation. It was mistakenly supposed that he had implied an improvement or recovery from the condition of imbecility, and hence his operation was repeated by many surgeons in many lands—Dr. Keen in this country and Dr. McBurney and I having done a number of such operations. The subsequent histories of these cases, however, has demonstrated conclusively that no marked mental improvement ever follows this operation. It is evident that the microcephalus is not the cause of the imbecility, but that the imperfect and rudimentary development of the brain, which does not grow in proportion to the rest of the body, prevents the normal expansion of the skull over a normally growing brain and leads to an early closure of the fontanelles, though, as is well known, such a closure in no way affects the growth of the size of the head in a normal infant, granting that the brain within it be normal. All imbeciles improve gradually under proper instruction as they grow older. In some cases they even develop rudimentary speech spontaneously, hence the slight improvement which in some cases has appeared to follow the operation in no way differs from a corresponding improvement in patients equally affected but equally trained, who have not been operated on.[6] For this reason I no longer recommend any operation on the head in cases of idiocy, imbecility, hemiplegia and epilepsy dating from childhood, and it may be stated incidentally that these operations have no effect whatever on the painful condition so often associated with these conditions, namely, athetosis.

I may record one case in particular in which a hemiplegic child with very extreme athetoid movements in the paralyzed limbs was operated on by Dr. McCosh at my suggestion, and a thick organized clot, more of the nature of a thin connective tissue membrane was stripped off from the motor-centers of the arm and leg without any subsequent benefit either to the hemiplegia or to the athetosis. In two other cases of the same nature in which operation was performed, a peculiar connective tissue structure was found occupying the motor zone of the cortex, which resembled in appearance honeycomb, the interstices being filled with serum. The removal of this structure which was regarded as the terminal organized relic of an early hemorrhage, produced absolutely no permanent cure in the child's condition.

---

[3] Amer. Jour. Med. Sci., 1903, p. 1017.
[4] Amer. Jour. Med. Sci., 1905, p. 563.
[5] "Brain Surgery," Case 18, Wm. Wood & Co., 1893.

[6] Marten Marten's recent novel: "The Healers," has added interest in this subject.

rises steadily to 250 mm., measured on the Riva Rocci apparatus, in a case of apoplexy, and coincidently with this rise there is a slow pulse falling to 50 a minute, we may say that the case will be fatal. It is in such a case that we are justified in resorting to surgery.[3] The object in view is to relieve the intracranial pressure. This is to be done by turning down a large bony flap or making a large fenestrum in the skull, irrespective of any attempt to find or to remove the clot. The best place to open is over the motor area on the side opposite to the paralysis, for in some cases the clot may be found there. The dura is to be exposed and divided. If the clot is on the surface it will then be seen. If the clot is within the brain the brain will bulge and division in the depth of a fissure may succeed in reaching and evacuating the clot. Even if the clot is not found and
removed the relief of the intracranial pressure stesulted
alarming symptoms and recovery is much ...or, and the
Cushing's cases have proved. The pul... had a year and
soon as the skull is opened. Therefore, the absence of
rapid, Cheyne-Stokes re... the patient ought not to be
ness soon retur... doubt and operated on.
...of pulsation is very interesting. He did not
...lly agree with Dr. Dercum that the absence of pulsation is due to increased intracranial tension. He has seen cases in which there was absolutely no pulsation of the brain over the tumor and in which the pulsation was around the edges of the tumor. This was the very best indication that the tumor was there. In one case there was a subcortical tumor two or three inches deep, and there was the absence of pulsation, which was an indication that there was a tumor below the cortex. On the other hand, sometimes there is normal pulsation of the brain, in, around and above the tumor. Therefore, tumors may exist with pulsation, and they may exist without pulsation, and it is not possible to make any definite statement with regard to the presence or absence of tumors from the condition of pulsation of the brain in operations.

Dr. W. G. Spiller, Philadelphia, said, in regard to Dr. Mills' statement that the location should be accurately determined and the skull carefully measured, that he knew of an instance in which the tumor was missed by a quarter of an inch, owing to its being inaccurately localized. He was rather doubtful of the value of operation for removal in cases of glioma. He doubted if there is much benefit to be expected from the attempted removal of glioma, and whether the patient would not have lived as long, if not longer, without radical operation, as he believes there is a tendency of the glioma to grow faster after partial removal, for it becomes congested, better supplied with blood, and space is afforded for its growth. In one of the cases under his own observation, relief for a time was obtained by repeated operation. It is, however, almost impossible to distinguish at operation a glioma from a sarcoma. The former is infiltrating and it is probably impossible to remove the whole of the tumor. In one of the cases reported in which symptoms suggestive of brain tumor were present, a sudden gush of fluid occurred from the nostrils, possibly through the cribriform plate of the ethmoid bone, and afforded great relief. It seemed to be a palliative treatment by natural means. Dr. Knapp spoke of his very hopeful views. He tried to be conservative; if he was hopeful, it was because in the majority of cases palliative operation had been of benefit. By no means, did he believe that in every case there will be marked improvement. He is in favor of the dura being opened in every case of palliative operation. It should not be left open, nor should it be cut away, but it should be opened and the brain examined to see if there is any tumor. Recently he had seen a small tumor, half an inch in diameter, that could easily have escaped detection.

Meteorism of Typhoid.—Anders recommends turpentine stupes over the abdomen, or turpentine enemata, or the passage of a long rectal tube; also the change from milk diet to peptonized food, meat juices and albumin water.—*Denver Medical Times.*

---

from his buggy,AL TREATMENT OF GASTRIC
developed a motorDENAL ULCER AND ITS
operation was don RESULTS.
clot was found sen
taken out. His roM J. MAYO, A.M., M.D.
ually returned to*oncluded from page 915.)*
ly hemiplegic u... above the greater curvature, giving
many other cases hat oblique from above down, right to
v. SURG... two inches in length (Fig. 1). The
It will be re... transverse meso-colon are attached to
as far back as ...y three mattress sutures in such manner
longue in w... perfectly smooth peritoneal border, the
to micro... fatty margins being tucked up underneath
ar... not to cause adhesions. It is important that the
...stal end of the jejunum be attached as it naturally lies that it may at once drop to the left and posteriorly in its normal anatomical position.

The operation thus briefly outlined has a nominal mortality. We had but 1 death in 135 "no loop" operations. The anterior method preferably with a Murphy button or McGraw ligature, is occasionally demanded by reason of posterior adhesions or abnormalities in the meso-colon or duodeno-jejunal juncture; but as it sacrifices 18 to 20 inches of the most important part of the upper jejunum it can not be considered a close rival to the posterior operation. We have for the past year and a half abandoned all "loop" operations unless forced to them and in no case practice enteroanastomosis as a primary procedure. Of the total 600 gastric and duodenal ulcers 383 were subjected to gastrojejunostomy (64 per cent.).

The question arises—What results can be expected from gastrojejunostomy? In the early stages of any subject certain procedures gain a great reputation which later experience does not always bear out. While gastrojejunostomy is by all odds the most useful means of relief it is not a cure-all. It is purely a drainage operation and as in a large majority of cases the ulcers are situated in the grinding pyloric end of the stomach or upper duodenum, the alleviation afforded is certain and speedy. But if the lesion does not involve permanent interference with natural drainage the food will eventually pass out the normal opening rather than the gastrojejunostomy and a certain amount of shrinking of the anastomotic stoma or angulation may follow.

The dangers from this source are reduced to a minimum with a "no-loop" operation. The more serious the interference with the normal motility the greater the relief afforded by gastrojejunostomy, so that for indurated ulcer it is the method "par excellence." On the contrary in mucous lesions where the interference with gastric drainage is intermittent and due to muscular spasm the results are less certain.

GASTRODUODENOSTOMY.

The only operation on the stomach of any consequence which involves a new principle in surgery since the time of Billroth is that of Finney. It leaves the opening at the natural situation and the enlargement is downward along the greater curvature away from the ulcer area. Gastroduodenostomy is especially applicable to those mucous lesions which interfere with drainage through spasm. It supplements gastrojejunostomy admirably as its scope includes those cases in which the latter method has been less certain of cure and it has superseded pyloroplasty. We have had 72 cases with 4 deaths and the very large majority of those who recovered have remained well.

EXCISION OF THE ULCER.

Theoretically, excision of the ulcer is the logical procedure but it must be shown by careful examination that the one excised is the only one present.

The saddle ulcer of the lesser curvature, if it does not interfere with drainage, should be excised if practicable because, as has been pointed out, if the stomach is not dilated and the pylorus is open, muscular action will continue to force the food along the normal channel rather than out of the artificial stoma. Therefore, a direct attack on the diseased area under such circumstances, especially when the margins of the ulceration are hard and calloused, would seem to be sound practice. We have excised ulcers 14 times, 6 times of the lesser curvature and 8 times in connection with pyloroplasty and gastroduodenostomy, with no deaths.

RODMAN'S OPERATION.

Some four years ago it was suggested by Dr. William L. Rodman that as ulcer of the stomach in the large majority of instances was in the pyloric portion it would be wise to resect as one would do for cancer, closing both duodenal and stomach ends completely and reestablish the gastrointestinal canal by an independent gastrojejunostomy. We have performed this operation nine times with great satisfaction. All of the cases recovered and have remained well. It has its chief indication in indurated lesions in the vicinity of the pylorus.

RESECTION OF THE STOMACH.

The treatment of hour-glass stomach by some form of plastic gastrogastrostomy has been a popular operation but in the majority of instances the ultimate results are unsatisfactory as it leaves a large amount of scar tissue and if it happen that the pylorus is involved to any extent adequate drainage is difficult to secure.

Gastrojejunostomy on the proximal pouch does not prevent a certain amount of food passing into the distal loculus where it stagnates on account of loss of motility. Multiple gastrojejunostomies, one for each loculus with enteroanastomosis beyond, is an unnecessarily complicated procedure, especially if more than two loculi are present.

We have in 12 cases without a death resected the affected portion of the stomach in the following manner (Figs. 2 and 3): The gastrohepatic and gastrocolic omenta are divided and separated from the diseased area, a straight elastic holding clamp is placed on the proximal side across from the greater to the lesser curvature about one inch back from the proposed line of resection. On the distal side the clamp is applied obliquely from above down, right to left, to increase the diameter of the cut surface, saving from the greater curvature. In this way we have been able to secure on the distal side an opening two-thirds the size of the proximal one for suturing. By having one inch or more of the tissue projecting beyond the clamps the slack on the large or proximal side is taken up with each suture, the bite of the thread taking only two-thirds of the amount of tissue on the distal portion, a difference of diameter of one-third being disposed of in this manner without seam or noticeable pucker.

If the ulcer is situated close to the pylorus an end-to-end union is quite easy to obtain. In two cases we have been able to excise an ulcer of the duodenum close to the pylorus with direct union of the amputated end of the duodenum to the stomach, the pylorus being removed in both instances.

The last word on ulcer of the stomach has not been written and it is evident that no one operation will be applicable to all varieties. At the present time it would seem that gastrojejunostomy has the largest field of usefulness, especially in those cases in which there is permanent interference with gastric mobility by reason of obstructive lesions in the pyloric end.

For those cases in which obstruction is due to spasm or other non-mechanical cause the gastroduodenostomy of Finney is the operation of choice. In connection with this latter procedure the excision of an ulcer of either the stomach or duodenum in close proximity to the pylorus may be done with great satisfaction.

Gastric ulcers which do not interfere with drainage and in which there is no loss of motility should be directly excised if possible.

Calloused ulcers of large size and thick hard margins whether hour-glass or not, are best treated by some form of gastric resection as we have frequently found carcinomatous degeneration taking place.

The large majority of duodenal ulcers give indication for gastrojejunostomy. There are few exceptions in which excision or resection will give better results.

It can be shown that more than 90 per cent. of patients suffering from gastric and duodenal ulcer who have been subjected to operation have been cured. Failures are more often due to technical errors resulting in bad mechanics than to the inability of a properly executed operation to cure the disease.

To one who expects to practice surgery of the stomach we would strongly recommend a close study of the gastric manifestations of the neurasthenic state. Atonic dilatations, prolapse of the stomach and the various gastric neuroses may simulate ulcer very closely and a careful differentiation is absolutely essential for all of these latter conditions are unimproved and often accentuated by operation, bringing discredit on surgery as a whole.

DISCUSSION

ON PAPERS OF BILLINGS, LAMBERT, RODMAN AND MAYO.

Dr. John C. Hemmeter, Baltimore, stated that the recognition of gastric ulcer depends very largely on the exercise of the sixth sense. It is largely a diagnosis by exclusion. Recently he reported before the American Gastroenterological Association *a method of diagnosing gastric ulcer* which he hopes to be able to lift out of the sphere of speculation into that of absolute recognition and surety. He had a number of surgeons make experimental ulcers in dogs by removing the gastric mucosa. The incision was allowed to heal, and a suspension of bismuth subnitrate in 500 c.c. of water was placed in the dog's stomach, the dog being placed in the posterior position. He found that eight to ten hours afterward the bismuth could be recognized by means of the *x*-ray and the fluoroscope. In a case of very severe gastric hemorrhage in a human patient, whose stomach had been washed out with bismuth subnitrate and ice water, it was found at the necropsy by Recklinghausen that the bismuth had everywhere disappeared, except from the site of the gastric ulcer. There seems to be a peculiar form of exudate in ulcer which holds the bismuth, and the latter is shown plainly by the *x*-ray. In three instances he succeeded in diagnosing ulcer by this means. The patients were operated on and the ulcers were found. If the ulcer is located behind a rib, the rib will obscure the ulcer. Dr. Hemmeter stated that at times it is very difficult to differentiate between gastric ulcer and gallstones. There is not one symptom of cholelithiasis that does not occur also in gastric ulcer. The patient may even have jaundice in gastric ulcer and hemorrhages in gallstones when there is no ulcer present. To narrow down the diagnosis between gastric ulcer and gallstones, he advised giving eight grains of orthoform in one ounce of hot water. It will arrest the pain if it is due to gastric ulcer, but not if it is due to gallstones. As to the treatment, Dr. Hemmeter is convinced that the uncomplicated gastric ulcer is no object for surgical treatment. It is only when complications arise that more strenuous measures in the way of surgical intervention are indicated. When there is a perigastritis, or a stricture due to a cicatrix, a perforation, an intractable hemorrhage, in cases of persistent excess of hydrochloric acid, when there is a progressive atony of the stomach, then the patient should be operated on because there is something at the pylorus that is preventing the exit of food.

Dr. Max Einhorn, New York, thought at one time that all cases of pyloric obstruction had to be operated on. Among eight of his first patients operated on, four had to be treated medicinally for quite a while after the operation, and two died. This made him a little backward about recommending the operation; because the patient can get along tolerably well without operation, this procedure should not be recommended until the stage is reached where there is nothing else to be done. If the operation could be done without danger, with no mortality at all, then he would urge that all cases of pyloric obstruction be operated on, but not otherwise. As a matter of fact, benign pyloric obstruction, if not too far advanced, can be greatly ameliorated, and sometimes cured, by rational medical treatment.

Dr. A. P. Francine, Philadelphia, has been particularly interested in the incidence of gastric ulcer as found at autopsy. From the analysis of over 3,800 consecutive postmortems held at the Philadelphia Hospital, he found that chronic gastric ulcer occurred in 1.35 per cent. of the cases. This figure is almost identical with that obtained by Dr. Campbell Howard, of Baltimore, from a similar study. But Dr. Francine is inclined to believe that there may be error in figures gleaned even from this source, and this percentage is, if anything, too small. This comes about from the fact that a certain number of chronic ulcers heal and leave no scars, or the scars are so slight as to be overlooked in routine work. It is also true that small ulcers with minute openings on the gastric mucous membrane, which might during life have given rise to very definite symptoms, may in a similar manner be overlooked unless careful search is made for them. The great majority of acute ulcers heal and the diagnosis of acute ulcer rests with the clinician. Chronic ulcer is, as a rule, chronic from its inception. For the above reasons he feels that a fairer percentage, even for chronic ulcer, would be 1.50 per cent., or about three in every two hundred autopsies.

From the above studies Dr. Francine was much struck by the presence of tuberculosis and nephritis in these cases. In 76 per cent. of the autopsies these conditions were associated, and he was inclined to feel that in some way, possibly by reducing the general nutrition, and particularly the nutrition of the stomach, thereby creating a more favorable nidus for the action of the more direct or exciting causes of ulcers, tuberculosis and nephritis might be indirect factors in the etiology. With a larger experience, however, he has come to modify this view and to look on them as playing little, if any, part in the etiology. For of one hundred and forty-three cases of advanced pulmonary tuberculosis dying at the Phipp's Institute, in Philadelphia, there was not a single case of true gastric ulcer. In one case there was multiple, superficial ulcerations, evidently tuberculous.

As to why tuberculosis does not more frequently affect the stomach, Dr. Francine thinks it possibly owing to the powerful motor action of the stomach in rapidly passing on the contaminated food and sputum mass, and it is probable, too, that the glandular action of the stomach plays an important rôle in both hydrochloric acid and pepsin secretion. Clinical records of the incidence of gastric ulcer are, in general, subject to such error in diagnosis that he considers them of comparatively little value in estimating its true frequency. One condition which has come under his observation and which may lead to confusion is the hemorrhagic tendency or diathesis manifest in certain chronic dyscrasic diseases. He has known this to lead to error in cases of chronic nephritis, where antemortem there were definite symptoms simulating gastric ulcer, associated with the vomiting of pure blood, and yet at autopsy no sign of ulcer was found. Discounting, however, errors in diagnosis, he thinks that gastric ulcer is much more common clinically than pathologically.

Dr. Stanley P. Black, Pasadena, Cal., said that there is one test used extensively in the past, but which has been given up largely at present, and unjustly so, and that is the occurrence of peptonuria or albumosuria. Albumoses occur in the urine from ulcer in any part of the intestinal tract. In certain cases this may be of importance in arriving at a diagnosis, especially in obscure cases of gastric ulcer. He differed with Dr. Billings as to the advisability of putting the test for occult blood last. He would put it first, because it is a most important test; it is the test of last resort. Therefore, it is better to make that test first. The presence of occult blood in the stomach contents or feces does not mean necessarily gastric ulcer, but it is one found present almost invariably in gastric ulcer.

With reference to the treatment of this condition. Dr. Black would do as in any other case of ulcer, place it absolutely at rest; that is, keeping the stomach in an empty condition, excluding even ice, and relying entirely on rectal injections for nourishment. The physician ought to have a competent surgeon in consultation in every case to share the responsibility and to decide when surgical intervention is necessary. He believes with Dr. Rodman that excision is the ideal operation, but the technic of the surgeon is not perfect enough to avoid the great risk. However, the ideal operation of the future, the operation of the coming surgeon, will be complete excision of the ulcer and the entire ulcer-bearing surface.

Dr. John C. Munro, Boston, referred to 250 cases operated on at the Carney Hospital. Of these, approximately 70 were malignant, a half dozen only coming early enough for radical operation. The remaining cases were benign, and for these different types of operation were performed. In the typical gross ulcers the results have been so satisfactory that there is no longer any question in his mind as to the advisability of surgical treatment. Occasionally there occurs a disappointing result, the reason for which is not yet clear. For instance, in two cases of duodenal ulcers for which he performed a posterior anastomosis, there followed a perfect, immediate and persistent relief of all symptoms. Suddenly, at nine and fifteen months respectively, a sudden hemorrhage took place, from which one of the patients died. The fatal case was operated on by Roux's method; the other by Moynihan's. Progress up to the time of the recurrent attack was all that could be desired. It is only possible to speculate as to the true pathologic cause. Peptic ulcer comes to one's mind, first of all.

As to the type of operation. In the gross lesions Dr. Munro prefers the no-loop operation, as recently described by Mayo, and as used by him before Mayo established its logical value. These cases have remained complete successes, one of them being a congenital pyloric stenosis. Moynihan's method has proven far less satisfactory than either Finney's or Mayo's. The results from Finney's operation, when used judiciously, have been good, although the immediate benefit is slow to show itself, and for a while may lead to disappointment. Later reports from patients are reassuring and he has returned to this method for certain cases.

Dr. Munro has tried every type of operation on about 20 so-called neurotics, with, for the most part, visible, but insignificant evidences of past lesions, but without definite mechanical interference with the stomach functions. Almost without exception the results of drainage, no matter what method was used, have been disappointing or even fatal. The pathology of those cases is obscure. He thinks some are probably types of hysteria. Others are not wholly explainable on that hypothesis. The pathologic department of Harvard is working in conjunction with the hospital staff on these and other cases, and they hope soon to obtain some definite data that will help to clear up the confusion that surrounds this class of sufferers. Careful preliminary analyses and examinations do not clear up the diagnosis in many of them. If, at exploration, no sufficient cause for the symptoms is found, even though the relics of old-healed ulcers are discovered, he abstains from doing anything to modify the drainage of the stomach. Dr.

Munro is inclined to believe that it is this type of case, pathologically speaking, which gives the brilliant results obtained by medical treatment. He questions whether similar results are ever obtained in the medical treatment of gross infiltrated ulcers.

Dr. John M. Finney, Baltimore, referred to a surgical procedure suggested by him a few years ago, namely, pyloroplasty, a term to which some objection has been raised. The operation is essentially a gastroduodenostomy, but it has to do really with the enlargement of the pylorus. There are other methods of gastroduodenostomy, e. g., Kocher's subpyloric method, but the essential principle in Finney's operation is the enlargement of the pylorus itself. The proper term would be gastro-pyloro-duodenostomy. But on account of the length of the name he decided to retain pyloroplasty. His experience with this operation in the four years since he first performed it has been confined to thirty-five cases. He has used the method in all cases that have come under his care in which he felt justified in using it. In many cases he made use of other procedures. Of these thirty-five cases, two are of such recent occurrence, being still in the hospital, that he has eliminated them from the statistics. Therefore, only 33 cases are cited. Of these, four patients died. Autopsies were secured in these four cases, and in none of them could death be attributed to the operation. The first patient was a diabetic, who died on the fifth day after the operation from diabetic coma. The next patient was tuberculous, and in the fourth week after the stomach symptoms had been relieved by the operation, died of pneumothorax, developed while still in the hospital. The third case was one of those interesting cases of gastromesenteric ileus. The fourth patient was pregnant. Some days after the operation she developed a grave toxemia from which she died. Autopsy showed no peritonitis, but an intensely fatty liver.

The results, so far as the operation itself is concerned, in all the cases shown by the autopsy, were entirely satisfactory. Those cases in which Dr. Finney performed the operation cover practically all the conditions which one meets with in connection with acute and chronic ulcer. Of acute ulcers there were five cases: three were bleeding at the time. Four recovered and are well. One he has not heard from. The end results have been traced in all but two of the cases. Of healed ulcers, where there was simply a stenosis, he had sixteen cases. Of these he has heard from all but one. The others are all well.

Of dyspeptics there were nine cases; four well; one improved; two died; one not heard from, and one too early to report on. Of the obstructions where gastrosuccorrhea was present, there were two cases. Both patients are improved. In the large class of neurotic cases Finney performed six operations, against his protest in four cases. Three were unimproved. One has been improved up to the point where she is able to live in comfort.

Dr. D. S. Fairchild, Clinton, Ia., thought that the history of ulcer of the stomach in the future must be somewhat different from what it has been in the past. The early diagnosis of ulcer of the stomach has been shown to be difficult, only those who are skilled in diagnosis are able to determine with any degree of accuracy the existence of ulcer until certain organic changes have taken place in the stomach, such as contraction of the pylorus. In the future, when the diagnosis is made earlier, the statistics will be changed on account of the fact that a large number of cases will be distinctively medical. In the West the cases have not been regarded as ulcers of the stomach until the disease has become chronic, and then it has been too late for medical consideration. A very large percentage of these cases must be surgical in their character. Therefore, with earlier diagnosis in the future more of these cases will be medical ones. The fact of surgeons accepting medical treatment of ulcer of the stomach is based on the failure to find anything pointing toward chronicity or any considerable degree of contraction of the pylorus. When the stage of chronic ulcer of pyloric contraction is reached, then surgery must be resorted to.

Dr. Fairchild believes that ulcer of the duodenum is more distinctively a surgical condition than is ulcer of the stomach, because the walls of the duodenum are thin, and it often happens that symptoms are not very distinctive until the very dangerous condition of perforation has arisen. Therefore, it seems that the rule in the treatment of ulcer of the duodenum should be different from the rule in the treatment of ulcer of the stomach on account of these serious dangers arising in an unexpected manner.

Dr. C. S. Williamson, Chicago, called attention to the fact that a considerable number of ulcer cases run their entire course with almost the precise symptoms of the most frequent neurosis of the stomach, namely, hyperchlorhydria. In this group of cases there is no pain after eating, but, on the contrary, a sense of discomfort one or two hours after eating, often relieved on taking food or some alkali. Again, the tender spot so characteristic of ulcer may be lacking. There is instead a diffuse hyperesthesia over the entire stomach area. The dorsal pain point also is lacking. In fact, a considerable number of cases of ulcer of the stomach may run their entire course without any symptoms, except those of hyperchlorhydria. This is important because there is absolutely no way of making a diagnosis in the early stage in these cases, excepting by the presence of blood in the stool, the presence of blood in the gastric contents being of much less importance owing to the possibility of trauma from the stomach tube. Dr. Williamson urged that in this group of cases one should never omit to examine by means of the Weber test for occult hemorrhages. The persistent presence of occult hemorrhages, coupled with the symptoms already mentioned, make a diagnosis of ulcer of the stomach in the highest degree probable, although by no means certain. Occult hemorrhage is not a pathognomonic symptom, but simply one which adds greatly to the probable correctness of the diagnosis. A case coming under observation early, with persistent symptoms of hyperacidity and the repeated occurrence of blood in minute quantities in the feces makes the diagnosis of ulcer highly probable.

As to the negative significance of occult hemorrhages, almost no number of examinations for occult blood justifies a positive conclusion. On more than one occasion examinations were made repeatedly, two or three times a week, without finding any blood, and yet ulcer was present. In one case seventeen negative examinations were made, and the eighteenth was strongly positive. So that it is clear that every ulcer does not bleed, at least not at all times. If it does bleed, then it is a distinctively positive sign. If, on the other hand, occult hemorrhages are not found, then we should not jump at the conclusion that ulcer is absent. We should examine repeatedly and continuously. The situation is exactly the same as for examination of tubercle bacilli in the sputum. No number of negative examinations have any great weight, unless they are made with the greatest care and thoroughness and under the most favorable conditions, and even then the examination is never conclusive. There are a few cases where the Weber test, a very reliable test, will leave one in doubt. Under those circumstances one should never fail to make a corroborative test. The best corroborative test in Dr. Williams' judgment is the modified hemin crystal test of Strzyzowski.

Dr. A. J. Spivak, Denver, speaking of the treatment of gastric ulcer, especially the test treatment, said that not even water should be allowed, because water is also expelled from the stomach by peristaltic action, and, therefore, the ulcerations will not be benefited. In fact, to secure absolute rest of the stomach not even nutrient enemata should be given because they also produce peristalsis of the intestines, if not of the stomach, and peristaltic movements of the intestines produce a certain vibratory movement of the stomach, and, therefore, absolute rest of the stomach is not secured. Dr. Spivak does not understand why we should try to give these patients food. It has been seen from Dr. Ochsner's treatment of appendicitis that a patient can live ten or even twenty days without a particle of food. Why then should we want to give these acute ulcer cases food or anything at all that will irritate the whole or any part of the gastrointestinal tract of the patient. He is positive that we should have had greater and better results if the appendicitis treatment of Dr. Ochsner would be carried out, not only by not giving food by stomach, but also not by the intestines, in any case of acute gastrointestinal disorder.

Dr. George W. McCaskey, Fort Wayne, Ind., stated that he considered the work of Dr. F. B. Turck to be the greatest advance yet made in working out the pathology of gastric ulcer. Not only that Dr. Turck succeeded in producing typical ulcers by the feeding of colon bacillus cultures to dogs, but he has obtained this result not as an exception, but with remarkable uniformity in a large number of instances. If the histologic changes which Dr. Turck showed are to be credited, then we must minimize the importance of the gastric juice as an early factor in the production of gastric ulcer, because his examinations showed that the initial process is not one of self-digestion, but that it is one of autocytolysis. Dr. McCaskey has no doubt of the correctness of Dr. Billings' conclusion that the gastric juice is one of the principal factors in the grosser and later changes of gastric ulcer, but in the early changes it seems probable that the process is one of autocytolysis and not one of digestion.

He does not believe that it is safe to lay down a hard and fast rule in the matter of early feeding in gastric ulcer. He referred to two series of cases occurring in the Massachusetts General Hospital. In one series no food was given for some time. In the other series feeding was started almost immediately, and the difference in results was very small, indeed. The proper thing to do, he said, is to individualize the cases; to discriminate; to study. Take, for instance, a patient suffering from repeated hemorrhages. The emaciation may be extreme; the nutritive processes at the lowest ebb, and reparative processes can not go on in ulcer anywhere under such circumstances. Therefore, he believes, that in many cases we ought to feed these patients at once in order to restore those properties and constituents of the blood which permit the reparative processes to go on. He is generally in favor of the routine treatment of starvation for a limited period of time, with rectal feeding and the gradual use of stomach feeding later on, but in some cases the nutritive processes are so low that the patient should be fed even at some hazard.

With reference to the use of the stomach tube, he is highly in favor of its use in all cases where there is persistent débris in the stomach. It is absurd to talk about giving rest to a stomach that is full of débris and irritating secretions. Every day or, at least every other day, we ought to cleanse the stomach; and then introduce a bismuth suspension. The mortality from gastroenterostomies, he thinks, does not express all of the hazard and injury incurred from such an operation. He is heartily in favor of operation in properly selected cases, but it seems among other things that objections to adhesions formed between the stomach and bowel must cripple the peristalsis of these organs ever afterward.

Dr. W. E. Anderson, Farmville, Va., referred to a case of acute gastric ulcer occurring in a young woman to show what rest can do. After persistently trying various remedies recommended and accomplishing but little, he determined to stop all medicines and to give the stomach complete rest. He allowed no food or water in the stomach for twenty-one days, but during that time saline enemata were given to supply the body with necessary liquids, and also nutrient enemata every eight hours. The patient began to improve promptly under this treatment. On the twenty-first day a little hot water was given by mouth, but it was returned promptly. Dr. Anderson then concluded to let the patient wash out her stomach herself with a quart of saline solution twice every twenty-four hours. After a day or two the fluid was returned clear and the patient is on the road to recovery.

Dr. William H. Wathen, Louisville, Ky., referred to the error in the statistics of gastroenterostomy by the internists who oppose the operation to the extent that the surgeons advise it. He said we are as yet too young in the work of gastroenterostomy to draw accurate conclusions as to what will be in the future the ultimate or final results from this operation. This operation was performed but relatively a few times until about five years ago, and the literature on the subject shows that there has been an entire change by the leading surgeons of this country and of Europe in the method and technic of gastroenterostomy during that time. In this country, until about one year ago, most surgeons were either making the anterior anastomosis with an entero-anastomosis between the afferent and efferent limbs of the loop, or a posterior retrocolic anastomosis with a loop, and also an entero-anastomosis, frequently with obstruction or division of the proximal end of the jejunum, or with obstruction or division of the pylorus. Now, no surgeon would be considered modern in his methods, who did not as an operation of election eliminate the loop and the entero-anastomosis. Dr. Wathen never believed in or practiced any other method, claiming that the numerous immediate and ultimate bad results were all caused by a faulty technic. In the practice of Moynihan and Robson it was first noted that these complications did not follow the operation when the anastomosis was made posterior near the duodenojejunal junction to the lowest part of the stomach.

Dr. Charles G. Stockton, Buffalo, N. Y., said that while there are cases in which there is hemorrhage and no ulcer, there are also cases with cachexia in which hemorrhage is profuse and repeated and in which no ulcer and no cancer is to be found, either at the operation or at the postmortem. That class of cases should be borne in mind as being a source of disappointment to the surgeon and to the internist.

Dr. J. M. Anders, Philadelphia, stated that the surgeons and postmortem records of large hospitals have taught the internist that many cases of both gastric and duodenal ulcer go unrecognized. This fact renders it clear that diagnostic methods must be improved. In this connection, a point of first importance is that the internist follow the individual case to the operating table, if surgical intervention is required, with a view to confirming or disapproving his previous opinion with reference to the question of diagnosis. This is a means of improving one's diagnostic powers, which has scarcely been appreciated to the extent it deserves. From the statements made by Hemmeter and others, he said, it is obvious that the profession should inform itself in certain directions; it needs to be enlightened on the relation of pain, vomiting and other symptoms to the particular site of the gastric ulcer; also on the effect of ulcer according to its site on the bodily weight, and finally, by the special location of an ulcer on the development and character of the complications and sequelæ. Until information on these points is forthcoming, the ability to recognize these conditions and discriminate them from other affections, which simulate them, must remain imperfect.

Dr. Anders heartily endorsed what was said with reference to the importance of periodic occult bleeding as a diagnostic symptom of gastric and duodenal ulcer, but called attention to the fact that this valuable feature is often overlooked for the reason that in chronic ulcer the stools are often passed into the modern water-closet, hence are never observed. It should be an invariable rule in cases of gastric and duodenal ulcer to employ a bed-pan or other vessel, and a systematic, routine examination of both the dejecta and vomitus should be carried out.

It must be admitted, he said, that there is a surgical treatment and also a clearly-defined medical treatment of gastric and duodenal ulcer, but he emphasized the fact that the combined medical and surgical treatment can not fail of giving the best results, and by that he means observation of cases by both physicians and surgeons. The majority of the cases first fall into the hands of the internist, who, he thought, is inclined to procrastinate, as a rule, in the matter of procuring surgical advice.

Dr. Frank Billings, Chicago, said that he was glad to hear Dr. Hemmeter say that the Roentgen ray will always reveal a gastric ulcer. That has not been his experience. The Roentgen ray, in his estimation, is an instrument more at fault in its interpretation than any other diagnostic aid in use. The instruments used and the ray itself are all right, but they are operated by individuals who do not know how to use them and who do not know how to interpret shadows. If he had to rely on the Roentgen ray to prove, finally, that a patient had an ulcer of the stomach, he fears he could not do it.

As to the use of orthoform as a differentiation between gastric ulcer and cholecystitis, he has found that orthoform does not always stop the pain of ulcer.

Concerning the treatment, Dr. Billings emphasized what Dr. McCaskey said, to study the individual case and treat it individually. There are two varieties of ulcer, the acute soft and the chronic indurated ulcer. Physicians all are of the opinion that the former may heal under rest, whereas the spontaneous healing of a chronic indurated ulcer is always in doubt. The physician who has such a patient in charge and attempts to cure by the use of medical treatment for six months, must test results of the treatment by constant attention to all the symptoms recognized as ulcer. The motility of the stomach, the presence of pain and the presence of occult blood must be considered. The continued loss of blood in the stool goes on many times in cases that are under the rest cure, and such patients have anemia and continued loss of weight in spite of all attempts at rectal or other forms of feeding. This, in his opinion, is one of the chief reasons why such people are surgical patients. In other words, chronic indurated ulcer of the stomach is a surgical disease. That does not mean that it is going to be a cutting treatment. It is a mechanical treatment, and if the rest treatment can heal these patients it should be done, but it must be proven that the ulcer is healed. His experience has been that a majority are not healed. They are simply latent and usually are finally referred to the surgeon.

As to the end results of surgical treatment. The last word has not yet been said, and it means that the physicians and surgeons are not to quarrel over this matter. They must work together. The surgeons will let the internist have the opportunity to examine and to attempt to cure these patients in any way at his command, but failing to accomplish this, the surgeon shall have the patient. The surgeon should keep a record for several years, so that in five years we may have valuable data.

Dr. Alexander Lambert, New York, said the question that seems to be the most disputed is whether the patient should have water and ice during the rest treatment. What he said was that they may have it. Dr. Black, he thinks, is perfectly right when he says that some patients will do better without it because they are nauseated by water or ice. But it is impossible to lay down any hard and fast rule in that regard. These patients must be treated as individuals and not as a class. Make rules for each patient and not for all cases of gastric ulcer. The importance of absolute peristaltic rest was, he thinks, overestimated. The stomach should have complete rest from digestion and the mere giving of rectal enemata will not seriously disturb that rest. Absolute starvation may be wise in some patients, but it is certainly very unwise to take a half-starved patient, one who is going to pieces from malnutrition, anemia and starvation, and try to help him further by starving him for a week. In some cases it may be wise, while in others it is absolutely contraindicated.

Dr. William L. Rodman, Philadelphia, said that he believes that medical treatment should be carried out for four weeks and that then, if not successful, it should be followed by surgery. Chronic ulcer rarely is cured by medical means. It seems to be a surgical condition, just as acute ulcer is strictly a medical condition. He was very much gratified that practically all the essayists were agreed that the direct method is preferable in the treatment of hemorrhage, where it is practicable. Gastroenterostomy is a makeshift. It will not arrest hemorrhage from a vessel of any considerable size, but only a capillary leak, and in the majority of instances the hemorrhage is from a vessel of importance. He believes that this is a further argument for radical measures. If, as Dr. Hemmeter said, it is possible with the bismuth test and the *x*-ray to diagnose the site of ulcers, surgeons certainly will be able to excise these ulcers better than they can at the present time and with far better results. The trend is increasingly toward excision.

Dr. W. J. Mayo, Rochester, Minn., said that Dr. Munro, in calling this "no-loop" gastroenterostomy method the "Mayo operation," is doing them too much honor. There are really but two men who can claim any great amount of credit, Woelfler and von Hacker. All operations devised since their time have been merely modifications made to meet certain conditions. As to the operation which the Drs. Mayo have advocated, the only claim that they have in the operation, said he, is that they have gathered up from different men certain points and ideas that seemed good, assembled them as a whole, tied a string around them, and all they own is the string.

Surgery, he said, has made mistakes in connection with stomach operations, and when these are all summed up, it is the non-indurated mucous ulcer that has failed to obtain surgical relief and in many of these cases the diagnosis is still in doubt as the ulcer was not demonstrated. When the surgeon opens up the abdomen and fails to find what he expected, a gastric or duodenal ulcer, that is, when he can not demonstrate the ulcer and can not show that there are mechanical conditions present, he is getting on dangerous ground. He may have one of the cases that will be a discredit to surgery.

Differential diagnosis between gastric and duodenal ulcer is immaterial to the patient; he does not come to the surgeon filled with pride that he has a gastric ulcer, but he wants relief, and he can be surgically relieved as easily from the one condition as he can from the other.

Dr. Mayo endorsed everything Dr. Billings said. These cases are medicinally relieved and temporarily benefited, but are not often cured. It is up to the surgeon to show whether he can do better than can the medical man. So far as the indurated and calloused ulcers are concerned, they are surgical conditions. Dr. Mayo facetiously put it this way. When he has been asked when he considered that a gastric ulcer should be operated on, he has said not until it has had nine medical cures. These cases relapse. The patient gets a rest cure and is better for a few months. The trouble returns and he goes to some other physician, until, finally, he gets so that he starves himself, because, after all, it is the starvation that relieves, unless the ulcer is dealt with radically.

It is the same old question that came up in regard to gallstones and appendicitis; each attack had a medical cure, so that one case might mean ten or fifteen such cures. These cases do relapse and the majority of the patients will be treated surgically, if we can demonstrate to fair-minded men that we can get better and more permanent results than can the internists.

Clinical Notes

A CASE OF PURPURA HEMORRHAGICA.

LOUIS A. LEVISON, M.D.
TOLEDO, OHIO.

Patient.—A white woman, aged 55, was admitted to the Lucas County Hospital, Toledo, March 26, 1906, complaining of weakness and expectoration of blood.

Family History.—The woman's parents died of "paralysis," aged 65 and 64, respectively. One sister died of typhoid fever. There was absolutely no tendency to bleeding in any member of the family, either immediate or collateral. The patient had five children, one of whom died in infancy. The other four children are alive, and with the exception of a low order of mentality in one son, show nothing of interest.

Personal History.—The climacteric was passed at the age of 43, and neither then nor at her confinements was bleeding excessive. Her past life has been free from pathologic incidents, and with the exception of measles, "muscular rheumatism" and what she calls "eczema," there are no diseases to be recorded. The woman had once or twice complained of night-sweats; she had no other symptoms of tuberculosis. She would lie in bed too weak to walk; one attempt at walking was followed by collapse. She almost continuously expectorated a thin bloody sputum which oozed from the gums, palate, pharynx and tongue. Epistaxis recurred at varying intervals, lasting from a few minutes to three or four hours.

Examination.—Temperature was normal; pulse varied from 62 to 98; respirations were 20. The "eczema" had left rather extensive scars over the flexor surfaces of both forearms and the left supraclavicular and infraclavicular fossæ. Syphilis was denied, and with the possible exception of these scars, there were no evidences of this disease. Nutrition was fair, and, despite the persistent hemorrhages, there was no great loss of weight. The face was very pale and the lips anemic. Lips, tongue, gums and palate were covered with a dark brown stain, consisting of dried blood. The tonsils were not enlarged. When bleeding from the mouth was free, small blebs containing blood could often be observed on the hard palate.

These varied from 5 to 10 mm. in diameter. The nostrils at times were also covered with dried blood. The pupils were equal and responded to both reflexes. The glands of the body were not perceptibly enlarged. The skin was soft, moist and over the flexor surfaces of each forearm and the left clavicular were depressions, extensively scarred. These scars, particularly over the arms, had a peculiar network-like appearance. The thorax was of fair size, symmetrical with fair expansion. Palpation, percussion and auscultation showed normal lung findings. The apex impulse of the heart was ill-defined in the fifth interspace within the nipple line. The heart was normal in size. At the apex was a very soft, systolic murmur, not transmitted to the left side or back. The abdomen was apparently normal. There was no sensitiveness to pressure; the liver and spleen were not palpable and showed no increase or decrease in percussion boundaries. The ankles and feet were not edematous throughout the course of the disease, but became slightly so after the patient left the hospital. The genitalia and rectum were negative.

Hemorrhagic Eruption: Scattered over face, trunk, arms and legs were innumerable fine petechiæ, varying in size from 1 to 5 mm. By far the greatest number were very small, pinhead spots. They were most thickly placed over the extensor surfaces of the legs, between the knees and ankles. Here it was impossible to touch a spot with the end of the finger, where the skin was clear. Over the remaining parts of the body, the back, chest, face, arms, hand, etc., the spots were more discrete and also larger. The spots partially disappeared at times, and about May 1 the body was fairly clean; although at the places where the lesions were thickest, the skin had a greenish-yellow tinge from the decomposed blood. Slight bruises, incidentally sustained, were marked by bloody extravasations out of all proportion to the injury. None of the petechiæ disappeared on pressure.

Blood examinations were interesting. Table 1 shows the number of red and white cells and the hemoglobin per cent. (Dare).

Table 1.

Date.		Erythrocytes.	Leucocytes.	Hmg. %.
March	26	4,720,000	5,400	55
April	16	2,816,000	3,600	..
April	19	3,176,000	....	..
April	25	1,336,000	2.600	35
April	28	2,528,000	3,000	30
May	1	2,480,000	2,200	25
May	3	2,490,000	2,200	40
May	5	2,048,000	2.000	30
May	11	2,536,000	1,600	55
May	16	2,344,000	3,000	60
May	19	2,384,000	2,800	50
May	21	3,320,000	1,400	50
June	19	5,152,000	3,200	85

Table 2.—Differential Count.

Date.		Polymorphonuclears.	Lymphocytes.	Mononuclears.	Mast Cells.	Eosinophiles.
April	25	63	31.5	5	0	0
May	1	59.5	26.5	13	1	0
May	5	45	43	9	1	0
May	9	50	41	9	1	0
May	17	46	30	22	3	0
June	19	60	30	9	1	0

In making a differential count, both small and large lymphocytes are included under lymphocytes and the transitional cells are counted as mononuclears. The important alterations in these counts have been the high proportion of lymphocytes and the absence of eosinophiles.

In examining smears, while not making regular counts, I did see one and possibly two eosinophiles. This small number out of many thousands of white cells observed is of distinct interest. The coagulation time of the blood was delayed at first to ten minutes, but this period was shortened during the course of the disease. Red blood cells did not show many changes. Aside from the diminution in hemoglobin, the cells were not altered. Neither poikilocytosis, polychromasia nor basic stippling was noted. Parasites were absent.

Blood Cultures: Cultures were made in bouillon, glucose agar, nutrient agar and blood serum, but all these remained sterile. Inoculations of blood from veins of elbow into guinea-pigs were negative. The stools contained no blood.

Urine Examination: The urine was slightly turbid, light yellow, specific gravity 1020, acid. The twenty-four-hour amount varied from 1,000 c.c. to 3,040 c.c. The last examination showed the merest trace of serum-albumin: no serum-globulin or albumoses; glucose was absent. Microscopic examination showed a few red blood cells; no casts; calcium oxalate crystals were found in abundance.

Treatment.—On admission, the patient was given calcium chlorid internally, in gram doses four times daily. This was discontinued after three or four days, on the theory that it decreases the coagulability of the blood, if given for longer periods of time. Gelatin was given freely during the patient's entire stay in the hospital. The mucous membranes were painted with adrenalin chlorid during the hemorrhagic attacks. Iron and arsenic were given in the form of Blaud's mass and Fowler's solution, respectively.

Result.—Condition of the patient very slowly and gradually improved and she was able to go to her home ten weeks after admission. At present, the hemorrhagic attacks have ceased, but a considerable number of fine petechiæ remain.

REMARKS.

Purpura hemorrhagica has assumed much interest of late in connection with the bacterial investigations of many workers in this field. Letzerich was able to isolate an organism from the blood of a female patient, which produced purpura in rabbits. Other investigators have found bacilli or streptococci. The findings of various writers on this subject have been too divergent for us to consider the etiologic factor of purpura hemorrhagica as settled. In connection with the bacterial origin of this disease the low percentage of eosinophiles in this case is of interest. Simon has pointed out the relative decrease of eosinophiles in the infections, and this finding in the case is for that reason worthy of record as a possible link in the chain of evidence which tries to prove purpura an infectious disease.

Simon believes that a hypo-eosinophilia associated with an increase of the polynuclear neutrophilic elements is one of the "most subtle means of diagnosing certain bacterial infections," and cites a list of infections, including appendicitis, pneumonia, empyema, variously-situated abscesses, peritonitis, etc., in which this finding is present. If further observation should bear out the constancy of this septic factor of Simon its importance as a diagnostic sign would be unquestioned.

POISONING FROM OIL OF TANSY.

E. GARD EDWARDS, M.D.
LA JUNTA, COLO.

A case cited in The Journal, Aug. 11, 1906, prompts me to add to the literature the following case:

Patient.—C. H. J., aged 25, married, a large strong woman.

History.—I found patient in a convulsion that had every appearance of epilepsy and a history of having had three such attacks within a short time. The symptoms were almost identical with those described by Dr. Whitehill in the article referred to above. Respirations were rapid, pulse 124 and forcible; pupils dilated and without reaction, mouth bleeding, patient absolutely unconscious. There was a faint odor from the breath that reminded one of some pungent oil.

Treatment.—Acting on general principles, I gave 1/10 gr. of apomorphia. In spite of her benumbed condition, this produced copious vomiting, which was aided by filling her stomach, by a tube, with large quantities of warm salt water. One slight convulsion appeared after the administration of the emetic, and in forty minutes the patient was beginning to show signs of consciousness. At this time the respirations were 20, pulse 108, temperature 97. A hypodermic of strychnin, 1/30 gr., was given, and rest enjoined. Six hours later conditions were normal except temperature was subnormal.

Result.—The next day the patient was apparently as well as ever, and confessed to having taken 2 drams of oil of tansy about an hour before I was called, because of being overdue four days as to her periods, which had appeared some twelve hours after taking the medicine.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 859.)

ARISTOCHIN.

ARISTOQUIN. DIQUININE CARBONIC ESTER. CARBONYL QUININE.

Aristochin, $CO(C_{20}H_{23}N_2O_2)_2 = C_{41}H_{46}N_4O_5$, is the neutral carbonic ester of quinine.

It is prepared according to the patents by acting on quinine dissolved in pyridin or chloroform with carbonyl chloride or by heating together quinine and phenol carbonate in the proportion of one molecule of the latter to two molecules of the former.

It forms a white, absolutely tasteless powder, melting at 189° C. (372.2° F.) insoluble in water, difficultly soluble in alcohol, more soluble in warm alcohol and chloroform, very sparingly soluble in ether. It is capable of combining with one and two molecules of hydrochloric acid forming soluble salts. It is gradually decomposed by acids with liberation of quinine, thus acquiring a bitter taste; hence it is incompatible with acids.

It should be free from bitter taste. As it is decomposed by acids and alkalies with the formation of quinine, it should respond to tests for quinine after such treatment.

Actions and Uses.—The same as those of quinine, but, since it is only slowly acted on by acids, it is said not to produce disturbance of the stomach and to be notably free from tendency to production of cinchonism.

Dosage.—The same as that of quinine, in powder, mixed with milk sugar, dry on the tongue or suspended in liquids.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). German patents No. 105,666, 134,307 and 137,308. U. S. patent No. 625,075.

ARISTOL.

A name applied to Thymolis Iodidum, U. S. P.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. trademark No. 17,393.

ASPIRIN.

ACETYLSALICYLIC ACID.

Aspirin, $C_6H_4.O(CH_3CO).COOH$, 1:2 $= C_9H_8O_4$, is the acetyl derivative of salicylic acid.

It is prepared by the prolonged heating of 50 parts of salicylic acid and 75 parts of acetic anhydride at about 150° C. (302° F.) under a reflux condenser, and subsequent purification, by recrystallization from chloroform.

It forms small, colorless, crystalline needles, melting at 135° C. (275° F.), odorless and having an acidulous taste. It is soluble in 100 parts of water and freely soluble in alcohol or ether. It is readily split up on boiling with water or with alkalies with the production of acetic acid and salicylic acid or a salicylate.

It forms clear, colorless solutions, which do not develop a violet color on the addition of ferric chloride unless previously hydrolysed by boiling with sodium hydroxide. It gives no reaction with silver nitrate, and should leave no residue when heated on platinum foil.

It is incompatible with heat, moisture, alkalies, their carbonates and bicarbonates. It keeps well when properly protected.

Actions and Uses.—It acts like salicylic acid, over which it possesses the advantage of producing less of the undesired local and systemic side effects, on account of the slow liberation of the salicylic acid. It passes the stomach unchanged, the decomposition beginning in the intestine.

Dosage.—0.3 to 1 Gm. (5 to 15 grains) in capsules or wafers, or dissolved in sweetened water or dry on the tongue, followed by a swallow of water. The powder should be dispensed in wax paper.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 644,077. U. S. trademark No. 32,805.

BENZOSOL,

GUAIACOL BENZOATE. BENZOYL-GUAIACOL.

Benzosol, $C_6H_4(OCH_3)(C_6H_5COO){=}C_{14}H_{12}O_3$, is a crystalline compound of guaiacol in which the hydrogen of the hydroxyl is replaced by benzoyl.

It is prepared by warming the potassium salt of guaiacol with benzoyl chloride and crystallizing the product from hot alcohol.

It forms colorless, minute crystals which melt at 59° to 61° C. (138.2° to 141.8° F.); they are odorless and tasteless or nearly so. It is practically insoluble in water, sparingly soluble in ether, but readily soluble in hot alcohol. It contains 54 per cent. of guaiacol.

It forms with sulphuric acid a permanent yellow coloration which on the addition of acetone assumes a characteristic, brilliant cherry red color, distinguishing it from salol, which gives a yellow color. Ferric chloride produces in the benzosol sulphuric acid mixture a violet color, changing to green and blue, and, on the further addition of nitric acid, to orange and green, or of potassium nitrite to green, violet and yellow. When heated (saponified) with alcoholic potash, the odor of guaiacol is developed.

It is incompatible with the alkalies, which split up benzosol into guaiacol and benzoic acid.

Actions and Uses.—Benzosol is decomposed slowly in the intestinal tract into guaiacol and benzoic acid which exert their proper actions. The liberated constituents are absorbed and excreted in the urine. It is not irritating.

Its uses are analogous to those of creosote and of benzoic acid. It is recommended in incipient pulmonary tuberculosis, as an intestinal antiseptic in fermentation. diarrhea, typhoid fever, diabetes mellitus and as a urinary disinfectant in cystitis, etc.

Dosage.—0.2 to 0.6 Gm. (3 to 10 grains), in powder, capsule, pill, or suspended in liquids or as an emulsion.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). U. S. patent No. 453,035.

BETA-EUCAINE HYDROCHLORIDE.

EUCAINE HYDROCHLORIDE-β. BETA-EUCAINE.

Beta-eucaine hydrochloride, $C_5H_7N(CH_3)_3(C_6H_5COO).HCl$, is the hydrochloride of 2,6,6-trimethyl-4-benzoyl-hydroxypiperidine.

It is prepared by treating diacetonamine with paraldehyde, reducing the product with metallic sodium, benzoylating the vinyldiacetonalkamine so produced by treatment with benzoylchloride, neutralizing the resulting benzoylvinyldiacetonalkamine with hydrochloric acid and crystallizing.

It forms a white crystalline powder, soluble in 20 parts of water at the ordinary temperature, but more soluble in warm water, soluble in 14 parts of alcohol, producing neutral solutions which can be sterilized by boiling without change. The aqueous solutions yield ether soluble precipitates of the free base on addition of alkali hydroxides or carbonates.

The saturated aqueous solution gives no precipitate with mercuric chloride, which distinguishes it from the corresponding alpha-eucaine salt. It gives no color reactions with sulphuric or nitric acid, but yields a yellow precipitate with chromic acid. orange yellow with bismuth-potassium iodide, lemon yellow with picric acid, and a white precipitate with phosphomolybdic acid. It is incompatible with alkalies and their carbonates.

Actions and Uses.—Beta-eucaine hydrochloride is a local anesthetic like cocaine, but weaker and devoid of the stimulating properties of the latter. It does not dilate the pupil, nor does it contract the blood vessels as does cocaine. It has the advantage of stability even on prolonged boiling. It may be used in all cases in which cocaine is indicated as a *local anesthetic, especially* in ophthalmology.

Dosage.—It may be applied in a 2 to 3 per cent. solution to the eye, 5 to 10 per cent. for nose and throat and 5 to 10 per cent. for ointment for hemorrhoids.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering and Glatz, New York). U. S. patent No. 657,880. German patent No. 97,672.

BETA-NAPHTHOL BENZOATE.

BENZONAPHTHOL. BENZOYL-β-NAPHTHOL. NAPHTHOLIS BENZOAS.

Beta-naphthol benzoate, $C_6H_5.COO.C_{10}H_7 = C_{17}H_{12}O_2$, is the benzoic ester of β-naphthol.

It is obtained by heating b-naphthol and benzoyl chloride together at 170° C. (338° F.), extracting the product with alcohol, and crystallizing.

It forms colorless needles, or a white crystalline powder, colorless and tasteless, melting at 110° C. (230° F.). It is almost insoluble in water, but readily soluble in alcohol and in ether; it is also soluble in chloroform, in glycerin and in olive oil.

Benzonaphthol is decomposed by heating with caustic alkalies into naphthol and a benzoate which will then give their characteristic reactions.

To test benzonaphthol for the presence of b-naphthol it should be shaken several times with dilute solution of sodium hydroxide (1:10) and immediately filtered. If beta-naphthol is present in considerable amount it will separate as a turbidity or precipitate after acidifying with dilute sulphuric acid. If the amount of betanaphthol is small no precipitate appears, but the alkaline solution shows a bluish fluorescence and if it is boiled with chloroform, a green color is produced.

A solution of benzonaphthol should not give a violet color with chloride of lime or solution of iodine and alkali.

It is incompatible with antipyrine, camphor, phenol, ferric chloride, menthol, potassium permanganate, or urethane.

Actions and Uses.—Beta-naphthol benzoate is split up into its constituents on reaching the intestinal tract and acts as an antiseptic. It is said to be diuretic. It is used internally as an intestinal antiseptic in diarrhea and typhoid fever. Externally it has been recommended as a parasiticide in the form of 3 to 10 per cent. ointment, and has been used in psoriasis, eczema, scabies, etc.

Dosage.—0.2 to 0.5 Gm. (3 to 8 grains); maximum dose, single, 1 Gm. (15 grains), daily 4 Gm. (60 grains).

Manufactured by Fabrik von Heyden, Radebeul near Dresden (Merck & Co., New York). It is not patented nor trademarked.

BETOL.

NAPHTHALOL. NAPHTHOL-SALOL. SALINAPHTHOL.

Betol, $C_6H_4.OH.COO(C_{10}H_7) = C_{17}H_{12}O_3$, is the salicylic ester of β-naphthol.

It is obtained by heating b-naphthol-sodium and sodium salicylate with phosphorus oxychloride at 120° to 130° C. (248° to 266° F.).

It is a white, shining, crystalline powder, odorless and tasteless, melting at 95° C. (203° F.). It is insoluble in cold or hot water or glycerin, difficultly soluble in cold alcohol or turpentine, easily soluble in boiling alcohol, in ether, in benzene, and in warm linseed oil. In the cold it is not changed by acids or alkalies of moderate concentration. When heated with alkalies, it is decomposed into its constituents, which, if the solution is acidulated, will crystallize.

It is distinguished from salol by its higher melting point and by the production of a brownish green color, when a trace of nitric acid is added to its yellow colored solution in pure sulphuric acid. It burns on platinum foil leaving no residue (absence of fixed mineral impurities).

If 1 Gm. of betol is shaken with 30 Cc. of boiling water and filtered through a moistened filter, the filtrate should not have an acid reaction, (absence of salicylic, hydrochloric or phosphoric acid) nor should it after cooling show a crystalline deposit (salicylic acid or b-naphthol) and should not become turbid on the addition of silver nitrate (chlorides or phosphates) or barium nitrate (absence of sulphates) nor should it give a violet color with solution of ferric chloride.

Actions and Uses.—Betol is not affected in the stomach, but is split up in its original components when it reaches the intestinal tract by the pancreatic juice and intestinal secretions. It is believed to act as an intestinal antiseptic and, being excreted in the urine, to act in a similar way in the bladder.

It has the antirheumatic properties of salicylic acid. It is recommended for intestinal fermentations, catarrh of the bladder, particularly in gonorrheal cystitis, for rheumatism, etc.

Dosage.—0.3 to 0.5 Gm. (4 to 8 grains) in cachets, milk or emulsion.

Manufactured by The Heyden Chemical Works, New York. U. S trademark.

BISMAL.

BISMUTH METHYLEN-DIGALLATE.

Bismal, $4(C_{15}H_{12}O_{10}).3Bi(OH)_3 = Bi_3C_{60}H_{57}O_{40}$, is a compound of bismuth hydroxide and methylendigallic acid.

It is obtained by digesting 4 molecules of methylendigallic acid with three molecules of bismuth hydroxide in water.

It is a voluminous gray-brown powder, insoluble in water or gastric juice, but soluble in alkalies, forming yellowish red solutions.

Actions and Uses.—Bismal is an astringent and is recommended for the treatment of chronic diarrhea.

Dosage.—0.12 to 0.3 Gm. (2 to 5 grains) in cachets or powder.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. patent No. 605,240, German patent No. 87,099 (dropped in 1899).

BOROCHLORETONE.

A mixture of 1 part of chloretone (chlorbutanol) with three parts of boric acid.

Actions and Uses.—An antiseptic and anesthetic, used externally as a surgical dressing powder.

Prepared by Parke, Davis & Co., Detroit Mich. U. S. trademark.

BROMETONE.

TRIBROM-TERTIARY-BUTYLALCOHOL. ACETONE-BROMOFORM.

Brometone is 1,1,1-tribrom-2-methyl-propan-2-ol, $CBr_3.C(OH)(CH_3).CH_3 = C_4H_7OBr_3$, produced by the reaction of acetone on bromoform.

Made by the action of caustic alkalies on a mixture of bromo form and acetone.

Occurs in fine white, prismatic crystals which possess a camphoraceous odor and taste. It is slightly soluble in water, soluble in alcohol, ether, benzin and most organic solvents. It melts at about 167° C. (332.6° F.) and volatilizes on exposure to air.

Actions and Uses.—Brometone is claimed to have the sedative action of the bromides without the disadvantage of producing bromism. In doses of 0.3 Gm. (5 grains) four or five times a day, in adults, it is claimed to cause no unpleasant results and to produce no disturbance of the digestive organs, and to have no appreciable effect on the secretions. Its action is prompt and its effect is manifest for several hours. In doses exceeding 1.6 Gm. (25 grains) daily it may produce dizziness, vertigo, anorexia, and mental hebetude, all of which symptoms disappear on discontinuance of its use. Therapeutically it has been recommended in mild conditions of excitation and insomnia, in so-called narcotic abstinence, in hysteria and in nervous affections generally. It relieves some forms of cough and is said to produce amelioration in about 60 per cent. of cases of epilepsy. It has been used to relieve dizziness due to labyrinthine disturbances.

Dosage.—The dose is 0.3 Gm. (five grains), to be repeated two or three times during twenty-four hours.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

(To be continued.)

Radium in Trachoma.—Radium has been successfully applied by Kardo-Sisoyeff in 38 cases of trachoma, as he reports in *Russky Vrach.*, No. 20, 1906. The exposures were made every 2 or 3 days by means of a small tube containing about 10 mg. of radium. The tube was not pressed on the mucous membrane of the everted lids, but merely applied lightly and moved from place to place. The duration of each exposure was one minute. The benefit of the treatment was apparent as early as the second or third day, the granulations having become smaller, with very slight congestion. All forms of granulated conjunctivitis were treated, but the best results were obtained with papillary trachoma and diffuse infiltration. Especially in case of pannus the subjective symptoms were relieved by the second day, the lachrymation, photophobia, and spasmodic contractions of the lids.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price.........Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, SEPTEMBER 22, 1906.

DISINFECTION.

Dr. Chapin's paper on disinfection[1] is of the kind that may do much good because it is likely to lead physicians to review critically their own ideas, convictions and practices anent disinfection. Judging from some of the remarks in the discussion of the paper, the word disinfection, as used by Dr. Chapin, seems liable to be interpreted wrongly. It is absolutely necessary in discussing this paper to bear in mind that the disinfection dealt with by its author is that "which is commonly carried out by health officials after death or recovery from contagious diseases." It is the routine practice of this sort of disinfection that Dr. Chapin attacks. As to cleanliness and other disinfective measures during the course of a contagious disease, Dr. Chapin appears to hold only the most orthodox views; and he emphasizes the far greater value of continuous cleansing, in the real meaning of the word, as compared with the perfunctory terminal disinfection, in limiting the spread of communicable diseases.

It can not well be denied that if proper isolation and real cleanliness be maintained from the beginning to the end of an infectious disease, counting the end as the period when there is adequate ground to believe that neither the patient nor his attendants and others with whom he has come in close contact during his illness any longer harbor the infecting agent, then there will be no call for the elaborate official terminal disinfection now prescribed and more or less commonly practiced. Clearly this ideal condition of things is not as yet generally realized or realizable. It is, however, the objective point of our efforts to minimize the spread of infection by the patient, and when this point is actually reached in a given case terminal disinfection should be omitted because unnecessary. There is, then, room for intelligent discrimination in terminal disinfection.

Certainly Dr. Chapin is correct, also, in his interpretation of the evidence of the relative importance of living beings and dead objects as carriers of infection. To-day there is no escape from the conclusion that the most important sources of infection in the diseases now in mind are the sick or convalescent patient, whether the disease is typical or atypical, and the so-called healthy "carrier." These sources may be ambulatory; in them the infective agents may multiply and persist; the most that contaminated dead objects ordinarily subjected to disinfection can do is to harbor for a variable time the causative agents which now only rarely find suitable conditions for multiplication. Hence terminal disinfection, even when effective, in reality possesses a relatively small power to limit infection, for the simple reason that fomites, after all, play a subsidiary rôle in the spread of infection. This being the case, it is a mistaken policy to rely on terminal disinfection to the extent that adequate and proper isolation and continuous cleanliness and the special precautions indicated in each particular disease become neglected. And this is the necessary result of blind, indiscriminating reliance on so-called disinfection as practiced by virtue of custom and dogma, and the real disinfectiveness of much of which may well be questioned.

Such questions as the real value of terminal disinfection are settled definitely by actual experimentation. Statistical studies are essential. It is desirable that the subject receive more attention from the investigative point of view than heretofore. Mere affirmation of a fact, e. g., the efficiency of disinfection, does not create that fact. There is already actual evidence at hand that tends to create doubt of the value of disinfection. Thus Dr. Chapin states that in Providence there was a recurrence in only 1.55 per cent. of 258 cases in which the warning card was removed without official disinfection—a somewhat better showing than in the control instances. In the *Semaine Médicale*[2] it is pointed out editorially that in Paris obligatory disinfection has been practiced systematically under favorable conditions for about fourteen years, but during the decennium 1895-04 there was no fall in the morbidity of scarlet fever, diphtheria and typhoid fever, while that of variola increased. There were some oscillations in the mortality, but no decided fall. These facts are interpreted as proof of the inefficiency of disinfection as carried out in France. We need further observations of this character.

While the value of terminal disinfection, for good reasons, is being questioned, the possible benefits of effective disinfection must not be withheld in the many instances where circumstances appear to indicate disinfective measures. This is true particularly in the case of tuberculosis in which precautionary measures and cleanliness have been neglected. In certain other diseases, e. g., typhoid fever, diphtheria, Dr. Chapin very properly places as a prerequisite a reasonable certainty that all the members of the household are free from infection. The burden of establishing this freedom from infection in most cases falls on our public health officials.

In determining their attitude toward the questions here discussed physicians should bear in mind that as our knowledge of the infectious diseases grows, especially as regards the sources of infection, the methods of best combating communicable diseases necessarily require readjustment. This does not involve any weakening of "the germ theory" of infectious diseases. On the contrary a strengthening. Further, that at present the most effective preventive methods known are, speaking broadly, adequate isolation of the patient, continuous cleansing, i. e., disinfection, during the course of the attack, due recognition of the important and often too much neglected healthy carriers, and in certain diseases prophylactic immunization (vaccination, diphtheria antitoxin).

---

[1] The Journal A. M. A., Aug. 25, 1906, p. 574.

[2] July 25, 1906.

COLONIES FOR EPILEPTICS.

According to a careful estimate, says *Coöperation,* the organ of the Chicago Bureau of Charities, one in every five hundred of the population is an epileptic, and it, therefore, argues the importance of establishing public institutions for the care of these unfortunates. They are, it says, a burden to their friends and a menace to the welfare of others with whom they are associated, and yet they are not properly suited for the public institutions to which many of them are sent.

To a very large extent, this is the truth, but it is not exactly correct to infer that all cases need care in the same class of institutions, or even in any institution at all. The total of epileptics must include an appreciable number of individuals whose epilepsy is a comparatively slight disability and who are capable of maintaining themselves under the ordinary conditions in society. There are some, as physicians can testify, who, while suffering from occasional epileptic attacks, have their working power and social efficiency very little, if at all, impaired. There is another small minority of epileptics who require close restraint on account of their mental condition, and this class is much less than it would appear to be from the mistaken methods of their management. Many of the so-called dangerous epileptics are such only because of bad surroundings, ill treatment and probably also, in some cases, ill-advised medication. The fact that the use of the bromids can cause dangerous maniacal conditions was very early observed in the medical history of the drug, but has been too little appreciated, even up to very recent years.

A very large class of the epileptics, and probably the great majority, are perfectly suitable cases for an epileptic colony, in which they can be made not only happier and better in every way, but largely self-supporting. Perhaps it is not too much to claim that nine-tenths of those who are not practically disabled by their disease could be thus cared for. Under judicious management it is safe to say that the public epileptic colony could be the least expensive or burdensome to the taxpayer of any of the public charities. While economy should not be the first consideration, the nearest to self-support that is compatible with proper humane and scientific treatment should at least be the ideal in such institutions. There is no member of society that is more misunderstood by the general public than the so-called dangerous epileptic. A few are really dangerous and require restraint; the great majority of even the severe cases are perfectly manageable under proper surroundings by judicious moral and medical treatment. It would be impossible probably to remove every epileptic to such a colony, but for the great mass of those who are under public and private care it would be a blessing, and also a saving of public and private expenditure.

Epilepsy is not absolutely an incurable disease, even in such cases as are sent to the public institutions, there may be some capable of cure, and the curative treatment might well be an important object of the institution even if the results are not very great. The careful study of the disease will undoubtedly bring out many valuable facts and widen the scope of the curative function of the institution. At least this is a thing to be worked for, though the prospects of extensive results may not be the best. What has already been done abroad and in this country shows the possibilities for good of such colony treatment of the epileptic.

MILK AND ALCOHOL IN HOSPITALS.

Some very interesting data with regard to the comparative consumption of milk and alcohol in the London hospitals during the past forty years was the subject of an important communication from Sir Victor Horsley, the distinguished London surgeon, at the recent meeting of the British Medical Association at Toronto. These data are not likely to reach physicians through the ordinary channels because they were announced at the temperance luncheon instead of at the usual section meetings. According to Dr. Horsley the proportionate consumption of alcohol and of milk has been exactly reversed during the past forty years as the result of advance in medical knowledge with regard to the inefficiency of alcohol for the cure of disease. Forty years ago, at the beginning of the seventh decade of the nineteenth century, the expenditure for alcohol in the London hospitals was about $40,000 a year. The expenditure for milk during the same period was about $15,000. At the present time the annual expenditure for alcohol for medicinal purposes is about $15,000. The milk account on the other hand now runs up to over $40,000.

This represents very nearly the reversal of feeling in physicians' minds with regard to the relative value of these two fluids for the treatment of ailments of various kinds. It is true, as Sir Victor Horsley suggested, that the introduction of antisepsis and asepsis into hospital practice has accomplished not a little in doing away with the supposed necessity for stimulants. Forty years ago septic conditions were very common in the London hospitals and they were nearly always treated—as a sort of last resort—by large quantities of stimulants. Very few surgeons who recall those days consider that the stimulants did much good, but something had to be done, and the remedy at least gave a sense of well being to the patient that prevented most of the symptoms of discouragement in the face of surely advancing death.

Milk, however, has risen very much in the estimation of physicians during the past half century. Not a little prejudice existed, especially with regard to the consumption of large quantities of milk, and it was somehow thought, because of isolated unfavorable experiences, to be rather difficult of digestion by those who were in poor health. Now, however, it is recognized that observations of this kind were due to individual idiosyncrasies, and milk has come to be looked on as the most important element for conserving strength and renewing tissue loss that the physician has at his command.

It seems very probable that this difference of attitude with regard to both alcohol and milk will continue to be even more marked as the years go on. While here in America, perhaps, such a complete reversal of form has not taken place, this is partially due to the fact that American physicians were never as free in their use of alcohol for medicinal purposes as their British colleagues, while the movement that has emphasized the comparative inefficiency of alcohol for many symptoms for which it was supposed to be almost the supreme remedy began later in this country than in England.

THE LIFE INSURANCE EXAMINER AND THE AGENT.

We have referred to a number of improvements in life insurance examination work that ought to be secured. The attempt of an agent to use an examiner in trying to coerce an individual to make application for insurance is another abuse which is detrimental to the reputation of both company and agent; it is resented by the applicant and often subjects the examiner to insults. The examiner should never be asked to make an examination until the application has been made. When he is sent to call for an examination where the individual has made no agreement or appointment, the agent should be required to pay the usual fee, and for repeated offenses of this kind should be disciplined by the proper officials of the company. It saves time and annoyance to both the examiner and the applicant for the physician to make his own appointment by telephone or otherwise. The contention sometimes made that such a communication may give a half-persuaded applicant an opportunity to withdraw his application is a sad commentary on the current methods of life insurance soliciting.

This insane haste to rush the application to the home office, and to force a policy on an individual who has not been convinced that he desires it, is responsible for the fact that a more exhaustive and leisurely examination can not be made in doubtful cases. The use of the more refined methods of diagnosis, among them the examination of the blood, the estimation of the blood pressure, the use of the ophthalmoscope, and the more exhaustive study of the urine, both clinical and microscopic, in a twenty-four-hour specimen, would sometimes enable the examiner to discover defects or to eliminate the possibility of their existence, while without them his judgment of the risk must be uncertain. Of course, where such supplementary examinations are made, a reasonable fee should be added to the minimum fee of $5.00 for the regular examination.

A reform in some of these features of the life insurance business would conduce greatly to the comfort and efficiency of the medical examiner, would be to the advantage of the insurance company, and ultimately to that of the agents, who are in the main responsible for the existing conditions.

PRIVATE GAIN vs. PROFESSIONAL BENEFITS.

Last week we devoted considerable space to our esteemed contemporary, the New York *Medical Record*, and its attacks on the American Medical Association. Underlying the series of *Record* editorials was the insinuation that the American Medical Association, through its Journal, was accumulating money, and, further, that this money was being squandered or misappropriated, or something of the kind, by the trustees or by the officers of the Association, because—in the *Record's* opinion—a sufficiently detailed report of the affairs of the Association was not published to the world. This impression was conveyed in spite of the fact that every detail has been and is available at any time to those who are entitled to it. The *Record's* position as a critic in this matter will be appreciated when it is known that it does not publish and will not make known to any one even so much of its own affairs as its circulation. Every physician who contributes an article to the *Record* is interested in this particular information; he naturally wants to know something of the extent to which his article will be circulated if published in that periodical. Its circulation is also most important information for its advertising patrons, and is something that every advertiser has a right to know. The *Record* guards this information with the utmost care. It is conjectured, however, that its circulation is anywhere from 6,000 up—possibly the figure given is near the truth. It must be admitted, however, that if current reports are to be relied on, its circulation is constantly decreasing, and it might be embarrassing for William Wood & Co. to admit this publicly. But, be this as it may, what right has the *Record* to criticise the Association for the alleged withholding of minor details when it refuses to give to its patrons and supporters information of such fundamental and vital importance as its circulation?

Let us, however, consider another matter: We do not know what William Wood and Co.'s profits are from the *Record*, and it is not expected that a private firm will publish such information. Considering, however, that the *Record* gives little more than half as much reading matter as does the Association Journal, at the same subscription price, and that its advertising receipts from this source are large, it may be assumed that William Wood & Co. receive a fair profit from their paper, which is as it should be. In one of its editorials, the *Record* referred sarcastically and erroneously to a so-called surplus of a quarter of million dollars of the American Medical Association, not recognizing the difference between surplus and assets. In the commercial reports William Wood & Co., medical publishers, are rated at a pecuniary strength of from $300,000 to $500,000. Whence and from whom came this princely fortune? Since their business has been limited to publishing medical books and medical journals, it is fair to assume that it came from our profession. And what has William Wood & Co. done for the medical profession in return for this generous support which it has given them? Have they done anything? Nothing, absolutely nothing! Why should they! Since they are a commercial firm, what interest have they in our profession except what they can make out of it?

Now, what about the American Medical Association? Its income has been derived entirely from The Journal, which, for some years past, has made a fairly good profit. But these profits have been and are being used for the medical profession of the whole country, not necessarily for the individual members of the American Medical Association alone. From these profits the Association has been able to erect a building for its headquarters, thus realizing an ambition cherished by its members for many years; and has land to extend this building as the necessities of the future may require. It also has a reserve fund for future contingencies. For several years it has appropriated money for scientific research and for the development of organization and for better society work. To aid this work it is publishing a bimonthly bulletin, a periodical which is sent free to the presidents and secretaries of all the state and county societies of the country, to the councilors of the various state societies, and to others especially interested in building up county societies and making them more effective for good. Through its Council on Medical Education, it is working for higher standards and better conditions in medical education; and, through its Council on Pharmacy and Chemistry, it is endeavoring to check the dishonest practices of those who are offering to the medical profession fraudulent medicines and nostrums. For all this, and for other work of direct and indirect benefit to the medical profession as a whole, and to the public, the Association has been and is spending the money that it has received in profits from its Journal.

A year and a half ago the Association entered on a campaign to expose and to check the frauds and deceptions that had developed in the proprietary medicine business. It was known that the movement would be opposed by some of the journals whose existence depended on the support of those who would suffer from this campaign. It was not believed, however, that the *Medical Record* would be found among these, standing, as it claimed to do, for scientific medicine, and receiving, as it did and does, its support from those physicians who would naturally endorse this campaign. It was naturally to be supposed that William Wood & Co. would see the righteousness of the movement and that, even at a temporary sacrifice of some of its advertising receipts,[1] they would endorse and support it. But what happened? Did they have the *Record* endorse it? Did they see the hand-writing on the wall? No. Not only did the *Record* not endorse it, but, on the contrary, it opposed it in many ways, using sarcasm and ridicule because it had no arguments to offer.

When certain nostrums which were being exploited to and through our profession were shown to be frauds, did the *Record* tell its readers about it? No. On the contrary, it sold an extra amount of advertising space to the promoters of one of these frauds to hold up to ridicule and caricature The Journal and the Council on Pharmacy and Chemistry, and then refused[2] to publish a reply in the form of a statement of facts. When the Porto Rico Commission sent a letter[3] to the *Record* correcting misstatements that were being circulated regarding a well-known proprietary preparation, the communication was not published, presumably because it reflected on one of the *Record's* most prominent advertisers; this in spite of the fact that the letter contained information that every reader of the *Record* should have received.

Thus the *Record*, by deliberately opposing the work of the Council on Pharmacy and Chemistry, by wantonly attacking the American Medical Association, and by attempting to cause discord in its ranks, by refusing to aid in the campaign against frauds in "patent medicines" and impure foods, and by siding with its advertisers rather than with its readers, has shown itself to be an enemy to the profession and antagonistic to the best interests of both the profession and the public. We leave it to the members of the profession to draw their own conclusions regarding the value, and, especially, the sincerity of hostile criticism emanating from such a source.

In conclusion, we again suggest to William Wood & Co. that they think over this whole matter; that they consider whether it becomes a firm, which has been able to amass a fortune from the support given it by the medical profession, to allow its publication to oppose a movement endorsed by the best element in that profession—a movement inaugurated for the furtherance of honesty in the pharmaceutical business, and for the benefit of the profession and the public.

---

[1] Just as a sample of the advertising carried by the *Record*, we refer to a few now running in its advertising pages: Antikamnia, Ammonol, Phenalgin, Sal Codeia—Bell, Bromidia, Iodia, Neurilla, Eusoma, Papine, Echtol. Germiletum, Dioviburnia, Neurosine, Seng, Cactina Pillets, Tongaline, Echitone, Hagee's Cordial of Cod Liver Oil, Gray's Glycerine Tonic Comp., Vin Mariani, Kutnow's Powder, Uron, Syrup of Figs, Anasarcin, Robert-Hawley Lymph Comp., Micajah's Medicated Uterine Wafers, Hayden's Viburnum Comp., Zymoticine, etc.

[2] The Journal A. M. A., Sept. 23, 1905, p. 935.

[3] The Journal A. M. A., Oct. 7, 1905, p. 1099.

STANDARDIZATION OF SUPRARENAL PRODUCTS.

One of the most important additions to our therapeutic agents during recent years is the series of preparations from the suprarenal gland. While we do not yet know how widely these preparations may be used with satisfactory results, we do know that their value as therapeutic agents is such that they are depended on in many conditions, and that they should, therefore, be of uniform quality and character. The reports[1] which we published two weeks ago of the experimental work on these preparations show very plainly that the preparations on the market are of variable quality and character. This must not be. There is probably as much need for the standardization of these preparations as there is for the standardization of other organo-therapeutic products, such as diphtheria antitoxin, vaccine virus, etc. It is perfectly practicable to determine the strength of these suprarenal preparations with accuracy and to standardize them. It is presumed that the preliminary investigation made by Dr. Reid Hunt for the Hygienic Laboratory of the United States Public Health and Marine-Hospital Service was primarily to show the need of this standardization, and we understand that this department of the government is considering the advisability of undertaking a supervision of these preparations similar to that which is so effective for good in the case of some other products. The Division of Pharmacology of the Hygienic Laboratory is well equipped to carry out this work. We have no doubt that the manufacturers will welcome such supervision, since it is to their interest, as well as to that of the profession and of the public, that the preparations should have a standard for the guidance of those who make as well as for those who use them.

CATCHY NAMES AND THEIR DANGERS.

In our news columns this week will be noted a death in St. Luke's Hospital, Chicago, from the accidental use of a solution of atropin when urotropin had been ordered. This incident calls attention to the evil attendant on the prevalent manner of naming new remedies—proprietary, in nearly every instance. Is it to be wondered at that mistakes are made when we have to contend with the following similar names of preparations of widely different character and composition: Sanatogen, Sanitol, Sanitas, Sanoform, Sanoforme, Sanosal, Sanose and Sanosin? Then we have a variety of names that apply to the same article, as occurs in this particular instance which has caused a death. Hexamethylene tetramine is now an official preparation in the U. S. Pharmacopeia as Hexamethylenamine—an awkward word for physicians to get used to, but one that it seems will have to be adopted. This was first introduced as Urotropin, but now is on the market as Aminoform, Cystamine, Cystogen, Formin, Hexamin, Uristamine, Uritone, etc. Why not get rid of all these names and adopt the correct one—the official name? If the one who prescribed the urotropin at the St. Luke's Hospital had desired to use Schering & Glatz's preparation, it would have been an easy matter to have written "Hexamethylenamine (Schering)." In hospitals where young physicians are taking their first work in actual practice, which is the case in all hospitals having internes, would it not be worth while to set a good example by prescribing remedies under their official titles and not by perpetuating proprietary names?

Medical News

CALIFORNIA.

Polyclinic Opened.—The San Francisco Polyclinic, formerly located on Ellis Street, was reopened at 443 Filmore Street, September 11.

Exclude Trachoma Immigrants.—The quarantine officer at San Francisco has refused landing to 48 persons suffering with trachoma, 27 of whom were Japanese and 15 Hindus, who arrived on the *Siberia*, September 12.

New College Building.—The College of Physicians and Surgeons, San Francisco, has let the contract for the erection of a one-story frame building, as a temporary building for its uses, along the northwestern line of Fourteenth Street and Woodward Avenue, for $19,722.

Personal.—Dr. Coyle J. Tracy, Pasadena, has been appointed a member of the insanity commission in Los Angeles County. ——Dr. and Mrs. John J. Tully, Stockton, have returned after an extended tour of Europe.——Dr. Redmond W. Payne, San Francisco, left for New York, September 8, en route for Europe.

The Dead in the San Francisco Disaster.—The health department announces that 452 persons lost their lives as a result of the earthquake disaster, April 18. Of these, 266 were killed by falling walls, 177 perished in the fire, 7 were shot, and 2 died as a result of ptomain poisoning. Of the dead, 420 are believed to have been white, 18 Chinese and 4 Japanese.

Typhoid Fever.—It is reported that Pasadena is infected with typhoid fever. The disease is not epidemic but endemic, and is said to be directly traceable to the beaches, which in the present season are a veritable hotbed for typhoid germs. Families leave their homes in Pasadena for two or three weeks, living in tents or shacks on the beach, where they use any kind of water available without regard for its purity, and are surrounded by conditions which are very insanitary.

New Hospitals.—Dr. John L. White, superintendent of the Sacramento County Hospital, has been given permission to erect an open-air hospital for consumptives, to cost about $600.——The Southern Pacific Medical Department plans to erect two cottages and a one story building on the present hospital grounds in Sacramento, as the accommodations for patients do not equal the demands on the institution.——Work on the San José County Hospital, to be erected at a cost of $65,000, on the site of the old county building destroyed by the earthquake, will be initiated in October, and it is probable that the building will be ready for occupancy six months later.——The Wentworth Hospital has been incorporated in Sacramento with a capital stock of $50,000, by Dr. E. M. Wilder, Sacramento, and others.——A hospital is to be built at McCloud by the McCloud Lumber Company, which will cost $25,000.

COLORADO.

Italian Dispensary Opened.—An Italian dispensary has been opened at Palmer and West Thirty-fifth avenues, Denver, providing medical service for indigent Italians. The following constitute the board of trustees: Dr. Daniel S. Neuman, president; Dr. Charles H. McLean, secretary; the consul-general of Italy and Drs. Sherman T. Brown, Giuseppe Cuneo and Clare P. Conroy. The consulting staff is made up as follows: Drs.

---

[1] THE JOURNAL A. M. A., Sept. 8, 1906, p. 790.

Rodolfo Albi, Charles D. Spivak, Philip O. Hillkowitz, Amasa M. Bucknum and Pasquale De Cunto. The following make up the attending staff: Drs. Giuseppe Cuneo, Martin J. Waldron, Claud C. Keeler, Clare P. Conroy, Sherman T. Brown, Frank M. McCartney, Seymour D. Van Meter, Charles H. McLean and Orasio D. Abrahams; ear, nose and throat, Dr. Daniel S. Neuman; eye, Dr. Frederick A. Davis; nervous diseases, Drs. J. Elvin Courtney and Christian L. Neubert; diseases of the stomach, Dr. Charles D. Spivak; obstetrics, Drs. Rodolfo Albi and Thomas M. Burns; bacteriology, Dr. Thomas W. Hall, and *x*-ray treatment, Dr. George H. Stover.

State Society Meeting.—The program has been issued for the coming meeting of the Colorado State Medical Society, which will be held in the Albany Hotel, Denver, October 9 to 11. The first two days and the morning of the third day will be devoted to the reading of papers and discussions on general subjects, while the afternoon of the third day will be taken up by section work. For just one-half day, therefore, the whole society will be divided into sections, as follows: section on surgery, gynecology and orthopedics, of which Dr. Walter A. Jayne is chairman; section on internal medicine and nervous and mental diseases, of which Dr. James Rae Arniell is chairman; section on hygiene and sanitary science, of which Dr. Hugh L. Taylor is chairman, and section on ophthalmology, of which Dr. Edward Jackson is chairman. Judging from the titles of the papers the latter section includes the subjects of laryngology and otology. Dr. Richard Cabot, Boston, will deliver an address Wednesday afternoon on "Mind Cure: Its Service to the Community." The program contains abstracts for most of the papers announced, which gives those who desire to attend an idea of the probable scope of the papers to be read.

IDAHO.

State Society Meeting.—The fourteenth annual meeting of the Idaho State Medical Society will be held in Lewiston, October 4 and 5. The council will meet in executive session on the evening of October 3, and the scientific proceedings will commence at 10:30 Thursday morning. The headquarters will be the Lewiston Commercial Club. The annual banquet will be held at the Raymond Hotel Friday evening. THE JOURNAL has just received the program and finds the list of papers to be one promising an interesting meeting. Dr. J. B. Morris, Lewiston, is president, and Dr. E. E. Maxey, Boise, is secretary-treasurer.

ILLINOIS.

Diphtheria.—An epidemic at Bardolph, near Bushnell, has grown to such proportions that the authorities have ordered all schools and churches closed.

Physicians Ill.—Dr. William C. Hill, Murphysboro, is reported to be critically ill with typhoid fever.——Dr. Amos S. Bickel, North Chillicothe, is seriously ill with anemia, at St. Francis' Hospital, Peoria.——Dr. Wilbur J. Hawkins, Aurora, is ill with appendicitis at his home.

State Board Reports.—The State Board of Charities in its quarterly report, just issued, states that since the organization of the board last April, the commissioners have visited every hospital for the insane in the state, 52 county almshouses, 52 jails, 19 orphanage and child saving institutions; it has investigated the charges against the Soldiers Orphans' Home, Normal; the Soldiers Widows' Home, Wilmington, and the Asylum for Feeble-Minded Children, Lincoln, and has inspected the schools for the deaf and blind at Jacksonville, and the Soldiers and Sailors' Home, Quincy.

Coroners Meet.—At the annual convention of the Illinois State Coroners' Association, held in Chicago, September 11, 48 counties were represented. Peter M. Hoffman, coroner of Cook County, was elected president of the association; C. Z. Noel, Joliet, and C. N. Streeper, Alton, were elected vice-presidents; R. L. Baker, Peoria, was elected secretary, and William Woodruff, Springfield, treasurer. One of the most important matters brought up was the necessity of passing a law compelling physicians to report cases of a certain class to the coroner. There is nothing at present in the statutes to prevent a physician of Illinois from signing a death certificate, although he may not have attended the deceased in the capacity of physician for a number of years.

Chicago.

The Work of the Visiting Nurses.—During August the Visiting Nurses' Association cared for 1,227 patients, and the nurses made 5,738 visits.

Gift to Hospital.—It has been announced that Dr. D. K. Pearsons has donated an additional $5,000 toward the fund for the new Presbyterian Hospital, which brings the total fund to within $10,000 of the $400,000 required.

Fatal Error.—Anton P. Freund, druggist at St. Luke's Hospital, has been discharged from that institution as a result of his mistake in furnishing atropin instead of a proprietary preparation of a somewhat similar name in filling a prescription for a patient in the hospital, who died soon after. The coroner's jury recommended that Freund's license as pharmacist be revoked.

New Maternity.—A new site has been provided for the Chicago Lying-in Hospital and Dispensary, now located at 294 Ashland Boulevard, at the northwest corner of Vincennes Avenue and Fifty-first Street. The cost was $52,500, and the new hospital will be erected at a cost of between $150,000 and $200,000. The new hospital, with 60 beds, will be able to care for 1,200 patients a year.

Personal.—Dr. Alfred C. Girard, United States Army, retired, has been obliged to give up his plan of practicing in Chicago, on account of the serious illness of his wife, and has returned to the Pacific Coast.——Dr. George E. Baxter was held up and robbed of a gold watch and a small amount of money, September 12.——Dr. and Mrs. Julien E. Hequembourg have returned after a month's trip to the Pacific Coast.

Deaths of the Week.—During the week ended September 15, 548 deaths were reported, equivalent to an annual mortality rate of 13.94 per 1,000. The deaths for the preceding week were 515, and for the corresponding week of 1905, 514. Among the important death causes were: Acute intestinal diseases, 110; consumption, 55; Bright's disease, 43; heart disease, 41; violence, including suicide, 39; cancer, 34, and pneumonia, 30.

INDIANA.

Hospital Contracts Let.—The trustees of the Indiana Village for Epilepsy awarded the contracts for the first buildings to be erected on land recently purchased by the state at New Castle for $14,195.——The contract for building the Southeastern Indiana Hospital for the Insane, Madison, has been awarded at a price of $1,165,885.

Physicians Ill.—Dr. R. W. Martin, Washington County, was removed from his apartments at Lake James to the Wood Hospital, Angola, for the treatment of pulmonary abscess. He is in a critical condition.——Dr. Edward L. Elrod, Henryville, underwent operation September 5 for appendicitis at the Norton Infirmary, Louisville, and is recovering.

Personal.—Dr. Robert H. Ross, Cassville, has been appointed a member of the Howard County Council.——Dr. Albert C. Yoder has been elected secretary of the Goshen Board of Health.——Dr. Chester C. Funk has been elected secretary of the newly organized New Albany Board of Health.——The new board of health of Terre Haute met September 7 for organization and elected Dr. Thomas W. Moorehead president and Dr. Myron A. Boor, secretary.

Medical Colleges Open.—A mass meeting of the students of the Indiana Medical College and the medical department of Purdue University was held September 5 and constituted an informal opening of the fall term of the school. About 100 students were present, and Drs. Henry Jamison, Frank B. Wynn, Edwin F. Hodges, John F. Oliver, Albert E. Sterne, Theodore E. Potter and Alembert W. Brayton addressed the meeting.——The State College of Physicians and Surgeons, in affiliation with Indiana University, opened for regular work September 5, with 40 present. No formal exercises were held. An informal reception for the students was held September 5 in the college building, at which speeches were made by the president of the University, and Drs. Allison Maxwell, B. G. Myers, John F. Barnhill and James H. Ford.

MISSOURI.

Must be Vaccinated.—The board of health of St. Joseph has requested the school board to require all pupils to present certificates of vaccination before entering school.

Milkmen Fined.—Eight St. Louis milkmen were fined, September 12, for selling impure and adulterated milk. Two of these paid fines, one of $50 and the other of $25. The remaining six cases were appealed.

Impetigo, Not Leprosy.—Investigation of the case of supposed leprosy reported to the St. Louis board of health a few days ago, reveals that the case was one of impetigo contagiosa, and that the diagnosis of leprosy was erroneous.

countries that all India is infected is erroneous. For example, in the Bombay presidency and Sind, the section of India which is most affected, only 19 districts, and states and towns out of 108 are reported infected, and of the 19 places 15 furnish cases running from one to eleven.

Medical Bequests from a Physician.—The former professor of legal medicine and toxicology at Montpellier, France, Dr. Jaumes, who died recently, aged 72, made the medical faculty his universal legatee. A fund producing an income of $1,200 was left to found a chair of general pathology and therapeutics, and a prize in legal medicine was also endowed in both the medical and law departments. Another fund representing an income of $2,000 was left in charge for an aged relative, at whose death it reverts to the medical faculty, and $6,000 was presented to the local medical and other scientific societies.

Subscriptions for Schaudinn's Widow.—Committees have been organized in England, as well as in Germany, to solicit subscriptions toward a fund to be presented to the widow of the recently deceased young scientist, Fritz Schaudinn. Although only 35, his name is world famous from his discovery of the spirochete connected with syphilis, and this discovery had been preceded by several others of epoch-making importance in various fields of zoology, especially in the study of protozoa, sporozoa and hematozoa. He succumbed to the effects of an abscess in the pelvis June 22, as was duly chronicled in these columns at the time.

Fifth International Conference on Tuberculosis.—This assemblage convened at The Hague September 6. One of the chief subjects discussed was "Channels of Infection," and among others, Calmette of Lille reported the interesting conclusions of his research in this line. A brief summary of his work will be found on page 972 in this issue. He has found that not only tubercle bacilli, but also insoluble particles of mineral dust and pneumococci are able to pass promptly through the intestinal wall without leaving a trace of their passage, and are carried by the leucocytes to the lung. The accumulations in the lung afterward are more extensive than when the substances are inhaled directly into the air passages. A number of Americans were given a prominent part on the program, and their communications still further emphasized the importance of the work being done in this country.

LONDON LETTER.

(From Our Regular Correspondent.)

London, Aug. 31, 1906.

The Liverpool School of Tropical Medicine.

In view of the alarming nature of the recent reports with regard to the spread of sleeping sickness in Africa and of the fact that an expedition organized by the Liverpool School of Tropical Medicine has been studying this disease for three years in the Congo, Sir Alfred Jones, president of the school, requested an audience of the king of the Belgians in order to confer with him on the subject. Recently the king offered a prize of $40,000 for the person who should discover a remedy and placed a credit of $60,000 in the Congo estimates for the purpose of prophylactic research. He granted the request of Sir Alfred Jones and received a committee from the Liverpool school, which included the president, Prof. Ronald Ross, Professor Boyce, Dr. J. W. W. Stevens, Dr. J. L. Todd and Dr. Evans. The king gave a most attentive hearing to their views on the necessity of preventing the further spread of sleeping sickness. He agreed with Sir Alfred Jones that the question is one of international importance and said that as far as he is concerned he is prepared to do all in his power to relieve both the white and black population from this terrible scourge. He asked the Liverpool school to submit to him a scheme for the prevention of the disease, which will be done as soon as possible. He promised his coöperation if it is in any way feasible or practical. He expressed in high terms his appreciation of the energetic work now being carried on by the school and of the thorough manner in which its expeditions are worked. To show the value he placed on that work he bestowed the Order of Leopold on Professor Ross, Professor Boyce, and Dr. J. L. Todd, the last of whom worked on trypanosomiasis in the Congo Free State for three years.

The Diminishing Use of Alcohol in Hospital Treatment.

Sir Victor Horsley's statement at Toronto that alcohol is being rapidly superseded by milk in London hospital treatment is well borne out by accounts of Guy's Hospital. Not only is the general bill for alcoholic liquors diminishing, while the number of patients is increasing, but the beer bill is actually disappearing. Last year, when there were 8,626 in-patients under treatment, the expenditure on malt liquors was £8 12s 6d. In 1896, when there were 2,000 fewer patients, the bill was double this sum. So small is the amount of beer consumed at Guy's that for the first time in the memory of the management it has been considered not worth while to order the drink by the barrel and bottled beer has been substituted. The hospital patients are now consuming 100 gallons of beer whereas five years ago they consumed 512 gallons. At one time beer was considered an ordinary part of the patient's diet. That idea has now disappeared. The quantity of wines and spirits consumed shows a similar reduction.

The Anti-Malarial Campaign in the Federated Malay States.

The measures taken against malaria at Port Sweetenham, in the Federated Malay States, have been previously reported in The Journal. Dr. Hamilton Wright now reports great success. The port was designed by the government to replace that of Klang, on the upper tidal reach of the river of the same name. Port Sweetenham was jungle covered, flooded daily by tides and had an average rainfall of about 100 inches yearly. The district was a center of the worst forms of malaria. On the formal opening of the port Klang was abandoned and the river closed to sea-going vessels. Severe malaria immediately broke out among the officials and coolies employed on the railway and shipping. A commission was appointed, consisting of doctors, railway and works officials, to devise measures for the suppression of malaria and for the general sanitary improvement of the port. The recommendations of the commission involved an outlay of from $50,000 to $60,000 and were at once accepted by the government. The new port was dyked, drained, leveled and cleared. Since these measures were carried out there has been scarcely a case of malaria, and instead of being an unhealthy and shunned swamp, the port has become a desirable billet.

The Lot of the East End Doctor.

The onerous conditions of medical work in the east end of London are illustrated by the following advertisement which has appeared in the *Times:* "An east end medical man, B. A. (Cantab.), who has never had a day's holiday or a Sunday's rest since he has been in practice, and who has not sufficient capital to purchase a more comfortable living, would like to change his profession. He has taken honors in science, so judges himself capable of filling a post as analytical chemist. Having good credentials and references, he hopes that manufacturing firms, etc., will give his advertisement consideration."

VIENNA LETTER.

(From Our Regular Correspondent.)

Vienna, Aug. 28, 1906.

The Report of the Metropolitan Board of Health.

The annual report of the board of health of Vienna was issued a few days ago and gives a good insight into the interesting changes taking place in the capital, viewed from a medical standpoint. The area covered by the city is about 120 square miles, and the population for 1905 was 1,900,000. The number of medical practitioners was 2,500 active and about 500 not strictly practicing doctors (dental surgeons, hospital staff and purely scientific workers). The hospitals belonging to the state number 11, with about 6,000 beds, besides numerous asylums and children's homes. The number of the in-patients in state hospitals was upward of 60,000, and the number of out-patients was nearly a million and a quarter. The mortality rate in Vienna shows a constant though slight decline, and stands now at 18.7 per thousand. Tuberculosis in all forms is responsible for fully 15 per cent. of all deaths; it gives rise to the sad name of morbus Viennensis. In all other respects the mortality has been lowered with the exception of (perhaps) cancer, which is constantly increasing; perhaps the more definite means of diagnosis is responsible for this increase. The infant mortality was pretty high in some poor districts, but as a rule it hardly exceeded 160 per thousand. This compares not unfavorably with the figures for France, England and Italy. Not a single case of smallpox has been brought to the notice of the board for two years, and the last case seen in Vienna had been imported from Italy by a railway laborer. It is strange enough, that in the city where Kaposi once could make his famous studies on the histology of smallpox eruptions, 35 years later the young dermatologists have to study the disease from pictures and casts, from lack of actual cases. Compulsory vaccination has effected this change. The decline in diphtheria mortality is continuously noted in all cases in private and hospital practice. Two severe epidemics of measles, with a mortality of 8 per cent., and of influenza of the gastrointestinal type with complications in the middle ear, were noted during 1905, otherwise the year was singularly uneventful. The ratio of births was 1 in 950, and the annual increase of the population was 2.2 per cent.

Pharmacology

State Universities and the Public Health.

As will be seen by the following account, copied from the *Bulletin of the Kansas State Board of Health*, vol. ii, No. 7, the School of Pharmacy of the Kansas State University is making an examination of proprietary remedies when requested to do so by the Kansas State Board of Health. This is interesting and gives promise of better things. The departments of pharmacy and chemistry of state universities, supported by state funds, should do their share toward supplying information in regard to the composition of the many remedies proposed for use in the treatment of disease. In the past, these schools and departments have been restricted in their work because of insufficient appropriation, but now that the need of better protection of public health is being appreciated, as is indicated by the enactment of a national pure food and drug law, there should be little difficulty in securing more liberal support; especially, since the passage of this law has made it essential that each state establish control of foods and drugs manufactured for consumption within its boundaries.

The following is the report referred to:

"Several weeks ago a tragedy occurred near Ellinwood, in Barton county, which emphasizes the necessity of a curb on 'The Great American Fraud.' A letter from a physician in Ellinwood gives the pathetic facts in the case:

> " 'Louise Closen, aged sixteen months, while playing, secured a bottle containing tablets called "Vesitone," which an older member of the family was taking for bed-wetting. Her father does not know how many tablets were taken by the baby, but he thinks less than ten. Ten minutes after taking the medicine, the child became rigid in every muscle. The father gave it three-quarters of a teaspoonful of Winslow's Soothing Syrup. Two or three minutes later the father attempted to induce vomiting by giving salt-water and mustard, but did not succeed. The child was apparently unconscious from fifteen minutes after taking the tablets. A slight tremor was present during the whole time. Ten minutes after dying the spasm relaxed somewhat. The child died forty-eight minutes after taking the medicine.'

"The vesitone was sent to Professor Sayre of the State University for analysis, which is herewith submitted for the information of the public:

> " 'The report of analysis of a remedial agent sent us by the secretary of the State Board of Health, which was labeled as follows: "Vesitone for a Certain Cure of Kidney and Bladder Weakness, etc., manufactured by the Union Medical Company, Edwardsburg, Mich." The question by the secretary regarding this was: "Does the medicine contain poisonous ingredients?" Our examination shows that the tablets contain about one-twelfth grain of alkaloidal material in each tablet, of which a fair proportion is strychnin.'

"The following is taken from the wrapper, which sets forth the remarkable virtues of this nostrum:

> " 'It is a combination of a simple and harmless vegetable or herbal remedies that affects in a most wonderful manner the changes desired. Its action is directed so singly and directly to the affected organs that the cure is swiftly and surely accomplished without any shock whatever to the intricate organism of the most delicate child. It achieves its most marvelous results from the fact that it repairs and builds up the affected parts and organs in precisely the same way that they were weakened and broken down by the disease. The ingredients are so carefully chosen and so scientifically blended that there is absolutely no superfluous action, no organ is unnecessarily affected, and there is no irritation whatever from its use. In other words, it acts like a perfect antidote to the disease.'

"This statement, no doubt, was the occasion of the carelessness on the part of the parents in placing the remedy where the child might get it to play with. If this had been properly labeled, as containing a dangerous alkaloid, the parents would probably have exercised all necessary precaution to place it beyond reach of the little one.

"The coming legislature should enact a law compelling the manufacturers of all proprietary nostrums containing poisonous drugs to have the same distinctly set forth on the label, in order that people may be advised what they are taking. The coöperation of the physicians of the state is urgently requested in putting through a measure of this kind."

Character of Medicines Dispensed by Physicians.

The *Western Druggist*, in an editorial in the August issue, calls attention to the fact that though pharmacists are required by law to dispense drugs of a recognized strength and efficiency, there are no restrictions on physicians, who may dispense any and all remedies which they see fit to use. The editorial directs attention to the condition of affairs in Indiana, stating that it is an ideal state for the enforcement of laws in regard to pharmacy, because of the concentration of everything pertaining to medicine, food, hygiene and sanitation under one board and practically into the hands of the secretary, who has absolute jurisdiction over about 600 employés, unhampered by any political considerations. It then goes on to state that over one-half of the physicians in Indiana dispense their own medicines; that too often they procure their supplies from whomsoever will sell them most cheaply, and that nearly every city has one or more "fly-by-night" concerns, which, in order to get trade, undersell other dealers and often sell pharmaceutical preparations, such as elixirs, syrups, pills, etc., for less than the wholesale cost of the materials. Necessarily, the articles supplied by such concerns are liable to be below standard and could not be dispensed by a pharmacist without danger of prosecution and fine. An instance is quoted in which a physician had been giving a patient teaspoonful doses of a tincture of opium which he had purchased from one of these houses—the preparation probably being a weak solution instead of a reliable tincture—on giving the patient the same dose of a standard tincture of opium purchased from a druggist, opium poisoning resulted and the patient nearly died. This forcibly demonstrates, the drug journal says, that dispensing physicians as well as pharmacists should be required to use drugs of standard strength to obviate the danger to patients resulting from inaccuracy in dosage.

We are forced to acknowledge that there is much truth in the drug journal's comments. If physicians dispense their own medicines, they should be certain that what they use are reliable and of standard strength. As they are not able to test the preparations themselves, there is only one way by which physicians can have confidence in the preparations, and that is by obtaining them from reliable houses. But from recent developments, it would seem that it is not always easy to tell what houses are reliable. This much, however, must be admitted: Those concerns whose only claim is low prices for their products are not, as a rule, to be depended on. But if we mistake not the druggist is as likely to buy where he can cheaply as is the physician.

Whose Fault?

A certain pharmacist in San Francisco was, like so many others, burned out by the fire in April, relates the *California State Journal of Medicine*. He resumed business before the smoke had blown away, but on entirely new lines. He decided to run his store, for at least six months, as a purely prescription pharmacy, consigning nostrums, "patent medicines" and sundries to the outside place where they belong. His experience is most interesting. Within the first week a prescription for "antikamnia" was presented. It came not from a quack, nor from an infant in the profession, nor from an ignoramus, but from a physician of some standing in the community! Probably there has never been a more disgracefully but consistently dishonest and fraudulent nostrum foisted on our profession than this deadly "antikamnia," yet here is a physician, presumably a self-respecting gentleman, who continues to help along the fraud! And there were others as ignorant or as lazy who "prescribed"—forgive us the word—other nostrums, to the discouragement of the pharmacist who wanted to do the right. One day a woman came in with a prescription; it was filled and given her, but before leaving she asked for a bottle of a nostrum once popular with a certain class of physicians. Some kind friend had doubtless recommended it, and thus she was aiding (?) the physician. So it went until the shelves of the "prescription pharmacy" look about as much like a department store as though the effort for decency had never been made. The attempt to be clean and decent was defeated by the very men who should have supported it—the physicians!

Correspondence

The Attacks on the American Medical Association.

DETROIT, Sept. 14, 1906.

To the Editor:—As a contribution to a correct estimate of the criticisms in Association management, the following observations are presented:

1. There has always been criticism of the American Medical Association management, a criticism varying with its prosperity. In this it falls under the general law of powerful organizations. Someone is always ready, with a club, to hit the head of anyone who rises above mediocrity, so as to reduce him to the general level. Hence, no friend of the American Medical Association need be disturbed by wild criticism, criticism inspired by hostility to its fundamental principles.

2. The medical profession has never learned cheerful submission to the guidance of its leaders. Many are restive under any regulation essential to effective organization, criticising both the committees who make and the officers who enforce them. It seems an American characteristic to be "agin the givernment." Very slowly we are learning the value of medical organizations, and the necessity of meeting the conditions essential to their operation. Nor have we learned to follow any administration long without "kicking." We want change—without reason often—from the President of the United States down.

3. There is an obvious lack of faith, by many, in either the capability or honesty of such management. Grafters themselves, they suspect the management of using its opportunities to feather its own nest. But the vast majority, while not grafters, have suffered so much therefrom, that they are easily led to impute the worst motives to those outside their personal knowledge—hence many grades of criticism.

4. The business of the American Medical Association has grown to such enormous proportions that its success demands a concentrated administration. Twenty-six thousand members can not be consulted when a stock of paper is to be purchased or the weekly edition of THE JOURNAL mailed—one head must look after all subordinates, wherever working. He may gather about him a corps of councilors, in addition to those provided by the Association, but he must remain the head or be absolutely useless. To comprehend even a tithe of this business will tax the capacity of one who gives his entire attention thereto. Criticism not based on such intelligent grasp of the Association's business can hardly be classed among the valuable assets of a scientific person. Yet such criticisms are heard too frequently for the reputation of their authors.

5. The organization of the profession into a living unity presupposes a knowledge by each doctor of his place and work therein and his disposition to apply said knowledge. Little criticism of the management's shortcomings will be heard from those devoted to the cultivation of such knowledge and disposition, because all their energies are otherwise employed. The great need of our growing organization is "less talking, more thinking and doing."

6. The establishment of a "clearing-house for medical supplies of unknown composition," in the hands of a working board of acknowledged ability and integrity, has awakened widespread criticism from those whose illicit gains were endangered. But such criticism ought to rejoice every friend of scientific medicine, as it shows that the American Medical Association is committed to an oneness of thought and practice such as will command the world's respect. In this many confess that they "love the Association more for the enemies it has made."

7. In view of these and allied things, what answer can the management make to its critics? It can appeal to the standard of the great Teacher, "by their fruits shall ye know them." It can ask in what respect have we failed to bring forth in its season, each after its own kind? Never before in the world's history has a similar management exhibited results in any sense comparable with that of the American Medical Association—lack of space makes details impossible here.

8. Should outside members desire an investigation of the minute details of THE JOURNAL office, the management will welcome the same as an admirable means of answering unintelligent criticism.

9. Is it not possible to plan the general meetings so that all present may feel that they do just a little as a whole? Now each is a member of a Section, in which he may work as he pleases, but collectively, as individuals or sections, they are impotent.

10. Owing to the method of their selection, all members of the House of Delegates do not possess that peculiar knowledge or special training necessary to initiate wise moves for the good of the entire profession, hence its acts must be restricted to (a) selecting the management and (b) supporting its plans for the Association's prosperity. Thus the management, rather than the House of Delegates, is the tribunal to which new ideas relating to the Association should be presented. If it approves, the House of Delegates will confirm, and vice versa. This is the more important, as the management does business every day in the year, while the House of Delegates has only an ephemeral life of four days yearly.

11. Personally, I have found the management open to receive ideas from members, if presented in a helpful spirit, and ready to adopt them when convinced of their practical value. Hence it is suggested that each critic first present his criticism direct to the management, and later, if this fails, to the membership at large through the journals and societies.

It is hoped that all critics will follow the example of scientific students, viz., make sure they have made a real find in medical sociology by long study and reflection, ere bothering either the Association management or the medical public. So will the management have more time and energy to serve the Association, and the critic save his reputation as a careful student and logical thinker. LEARTUS CONNOR, M.D.

DETROIT, Sept. 11, 1906.

To the Editor:—Thanks for publishing my communication. The answer of Dr. Happel shows that it was justified. The elaborate answer brought out those very points that the members want to know, and will help to clear up the air, just as I intended it should. A few more explanations will satisfy everybody, and that is just what I want. The only objection I might have to Dr. Happel's answer is his repeated statements, when he compares our Association with a well-managed business. Ours is that to a limited extent. But our members are educated, intelligent beings, interested in every bit of work done, and have a right to know every detail and should not be compared with common, everyday stockholders of business institutions.

I still believe that the right way to conciliate "kickers" is to take the wind out of their sails, and open up everything, so that they can see the error of their views; in fact, that was my whole plea, my sole object. All members have the good of the Association at heart, but disagree about how to accomplish it. That is all. By a quiet, dispassionate discussion they will agree readily. Dr. Happel's answer contained a number of slightly ironical expressions at which I had to laugh. They are when he mentions Dr. Walker's name on several occasions. The fact is that Dr. Walker knew nothing about this communication, had absolutely nothing to do with it. I do not need inspiration from Dr. Walker or anybody else. "I paddle my own canoe." J. H. CARSTENS.

GREENVILLE, TEXAS, Sept. 10, 1906.

To the Editor:—I have just read Dr. Carstens' letter in THE JOURNAL, September 1, and wish to correct the statements made therein regarding the Walker resolutions. I do not know from whom Dr. Carstens could have gotten his impression that the Board of Trustees or the officers of the Association opposed the Walker resolutions. He certainly could not have gotten this idea from any member of the House of Delegates who was present at the time.

The moment the reading of the resolutions was concluded half a dozen men were on their feet (myself among the rest), trying to make motions. Dr. Jackson of Missouri was recognized by the President and moved to lay the resolutions on the table. This motion was immediately seconded by at least a dozen different men (myself among this number), was put to vote and carried unanimously, without any discussion whatever. I do not think there were more than three or four of the Trustees in the House at the time. Those Trustees who were present had no time or opportunity to express themselves favorably or unfavorably, as the House voted the resolutions down at once without discussion.

I voted to table the resolutions: 1. Because Dr. Walker had misunderstood the President's address when he said in his preamble that preceded his resolutions that he (the President) had indicated that there was a sentiment of uncertainty and distrust relating to the management of The Journal and sundry other matters, when the President had clearly shown in his address that there was no such sentiment except among those who were being shown up by the work being done by the Association, to-wit, the "patent-medicine" people and those working for them directly. 2. Because I considered them unnecessary, uncalled for, and not only a reflection on the Board of Trustees, but an insult to the intelligence of the members of the House of Delegates. The report of the Board of Trustees showed that this body had done its work in accordance with the instructions of the House, and we had full and satisfactory reports before us, and at the time the Walker resolutions were offered the Trustees had just satisfied the most exacting member in this regard.

Any man of ordinary intelligence would know that the rumors and gossip regarding maladministration were put in circulation by those who have an interest in disrupting the organization and causing dissension in our ranks. There could be no excuse in the mind of any intelligent member of the House of Delegates for such an investigation, and the only conclusion which I have been able to come to regarding the object of these resolutions is that they were introduced with the expectation that they would be voted down, thus affording capital for further insinuations. Evidently they are being put to the use for which they were intended. The evident feeling of the House of Delegates was that the resolutions were intended for ulterior purposes.

That the delegates did not want to discuss the matter is shown by the fact that they voted the resolutions on to the table without a word of discussion or objection from any one. Even the author of the resolutions apparently had no desire to discuss or defend them. The attempt to show that the officers or Trustees of the Association opposed the adoption of these resolutions is absolutely contrary to the facts.

C. E. Cantrell.

State Board Examination Statistics.

Columbus, Ohio, Sept. 4, 1906.

To the Editor:—In the statistics published in the Educational Number of The Journal, Aug. 25, 1906, we note some errors that affect the standing of the Ohio Medical University.

In Table A, "Physicians Examined by the State Boards During the Calendar Year 1905," the Ohio Medical University is credited with three examinations in West Virginia, with one failure. The facts are, two graduates were examined there in 1905 and both passed. Joseph Nathan Freilich, who had been a student and failed of graduation, session 1904-05, registered as a graduate and failed to pass the examination.

In the same table the Ohio Medical University is credited with two failures in Ohio. The only basis for this is that two of our graduates who took the examination were refused certificates for an alleged infraction of the rules. Their papers graded respectively 89 and 84 per cent. They took the examination again in the fall, passed with creditable grades and were given certificates. There was no question at any time of a lack of educational qualifications and the fact of certificates being refused does not mean an educational failure. It is not so recorded in the records of the board.

We appreciate fully the difficulties that beset the compilation of statistics and, therefore, do not call your attention to these errors in a spirit of unkindness. We ask, however, that they be corrected and the Ohio Medical University be given her proper standing. Very truly,

James U. Barnhill, Chancellor.
W. J. Means, Treasurer.

[The figures published in the tables referred to are not "errors," as our correspondents state, but are exactly as reported to us by the examining boards. We can not go back of these reports.—Ed.]

Miscellany

A State Board Examination Through a Frenchman's Eyes.—Dr. Ménager, a graduate of the Paris medical school, writes home entertainingly of his examination before the state board at Seattle, his communication being republished in the *Journ. de Méd. de Paris* for August 12. He had learned that the board would accept his replies written in French, on condition of his paying $15 for the necessary clerical work of translating. He relates that the candidates assembled in the "opera house," each with his diploma in a tin box under his arm, and the noise and commotion were indescribable. Finally, the jury took their places, each candidate took the oath, paid in $10 to the treasurer, and was informed in regard to certain formalities to get the rebate on his railroad ticket. A slip of paper with the questions was then handed to each one and they settled down to write. As places could not be found for all the candidates, the members of the examining board gave up their seats to them and sought places elsewhere. The president of the board took off his coat, as it was getting very warm, then his vest, and went around among the candidates in shirt sleeves and suspenders, and his example was gradually imitated by the other members of the board and finally by the candidates. This was such a contrast to the formality of such official examinations in France that the two French candidates could scarcely believe their eyes. Occasionally some of the members of the board or a candidate drank a glass of water from the Chamberlain filter in the center of the room, "always the same glass, there was only one!" "Oh, Parisian pontiffs," he exclaims, "where are the robes of state and the academic hoods!!" . . . "After each session the candidates themselves handed in their MS. to the secretary. Occasionally the president of the board would interpolate: 'Dear doctors, there is a vacancy for a physician at such a place; Dr. so-and-so wants an assistant; the widow of Dr. so-and-so wants to sell his office equipment; hotel so-and-so has reduced its rates for you doctors while you are here for this business; you will find good accommodations and a good table there.' Involutarily my memory recalled the formal professors of my days in France with new respect. They seemed very great and very dignified in comparison with the licensing board before me." . . . "The longer I live here, however," he adds, "the less I mind all this. Time is money here, and all the old-fashioned conventionalities take time, and they cut them out here." . . . "The members of the board shook hands with us all, promising a prompt decision, and in three weeks we received back our diplomas—for which they had given us a receipt—and the newspapers published the names of the successful candidates, about 75 out of the total 110. I ask myself whether France would have given so kindly a welcome to an American physician, not speaking French, and armed merely with his diploma from the medical school in Philadelphia, Baltimore or New York!"

Poisoning from Emanations of Phosphin from Commercial Ferro-Silicon.—The manufacture of a compound of iron and silicon by means of the electric furnace has acquired much importance in connection with the steel industries, and large cargoes are now transported from points at which water-power enables the electricity to be cheaply produced to the iron works at which the material is used. The following case of poisoning from this material was reported by P. Lehnkering, Duisburg, Germany, at the fifth annual meeting of the *Freie Vereinigung Deutscher Nahrungsmittelchemiker*, May, 1906: In March, 1906, a Rhine freighter car ried a cargo of wine, soap and ferro-silicon (the latter about 35 short tons) from Mannheim to a point convenient to the Krupp works. The ship had apartments for the crew as usual in the bow and two other apartments aft. The forecastle and one of the cabins were completely protected by partitions from any emanations from the cargo, but the other cabin was located over that part of the hold in which the ferro-silicon was stored, and emanations therefrom were constantly being inhaled by two children occupying that apartment. The children (aged, respectively, 6 months and 2 years and 6 months) became ill and were confined to bed shortly after leaving Mannheim, suffering from giddiness and vomiting. Arriving at Duisburg, after two days' journey, the children were taken ashore and a physician consulted, who made a diagnosis of "meat poisoning." Both patients died the next day. The parents who were on the ship, but who did not remain continuously in the children's cabin, were affected with headache and dyspnea only. A postmortem was made on the body of the younger child. It is stated to have given indications of death by asphyxia, but no detailed information was furnished. Analysis of the material showed it to be crude ferro-silicon which was emitting phosphin, due to the fact that the casks containing it had been exposed to rain shortly before loading. The source of this phosphin is the calcium phosphid produced by the interaction of the phosphorus and calcium present as impurities in the materials used. From his experiments Lehnkering estimated that the total cargo could produce 851 gm. of the gas. Chemical tests of materials from the body of the child gave negative results, but indicated that death was not due to inhalation of either of the carbon oxids. Investigation developed several fatal cases in adults as well as children, and also some cases of death of cats and dogs. In the above-detailed incident, a canary that was in the children's cabin died about the same time. As this product is now in considerable demand and as its method of manufacture (electric) is liable to force its production at a point distant from its application, the danger of its emanations becomes an important matter in ship hygiene.

Keep Up the Fees.—The following is from the *California State Journal of Medicine:* "Just another word or two on the, to the insurance companies, tiresome subject of fees for life insurance examinations. In the first place, remember that our agitation out here is making history. Some of the insurance companies are referring, rather contemptuously, to the fact that 'California and one or two southern states are the only ones in the Union where the cut in fees has not been accepted' in abject silence—presumably, also, with gratitude that the companies are so generous as to pay the examining physician anything. They are howling about 'coercion' and 'trades-union' methods, and the iniquity of requiring that all members of a county medical society shall be required to live up to a certain fee schedule. They also talk about the sacrifice of independence, etc. Do not let many words and high sounding adjectives disturb your natural equanimity. When it comes down to brass tacks, the insurance company must admit that $5 is a small enough minimum fee; indeed, many of the companies have already admitted it. Perhaps some of you take the *Medical Examiner and Practitioner*, a publication primarily intended for insurance examiners. This publication preserved a discreet silence, so far as we could observe, on the very important subject of fees, until after the Boston session of the American Medical Association. Since then the two issues which we have seen contained a considerable amount of matter referring to fees. In the July number is an editorial so skilfully constructed that it may disturb the reader. It attacks the American Medical Association for taking up the insurance fee question, and (mis) states that the Association has entered into an agreement with the companies to recommend Dr. A. against Dr. B. Don't you believe it. The Association is working for the benefit of each and every one of us, and the object of the special committee on insurance which was appointed at Boston, is to secure the readoption of the minimum $5 fee. The journal quoted says that it protests against the Association's trying to force the trades-union idea down the throats of the medical profession. That is all pure buncombe, and the *Examiner* knows it. The Association does not force anything on the profession, or any portion of it. When the Association does anything, it is because the demand has come up to the Association through the county or state organizations. So with this fee question; a number of county and state organizations sent memorials to the House of Delegates at the Boston session, asking the Association to take some action; and the Association acted most conservatively by appointing a committee to confer with the insurance companies and to try to adjust the matter. It is the county societies that are agitating the question, and it is eminently right that they should do so. Who ever said that the fundamental idea of the trades-union was wrong? Who is forcing organization on the medical profession? It is not being forced at all; medical men are coming to their senses and realizing that coöperation is better than conflict, that is all. Stick to your demands for a minimum fee of $5, and do not examine for less: you will win out, if you will have a little patience."

Formaldehyd Disinfection.—D. Base has subjected to experimental investigation the various methods of generating formaldehyd gas for purposes of disinfection, with a view to determine the amount of gas present in the air of the room after the use of the same amount and strength of formaldehyd solution with the various methods. The experiments were made on a room practically, although not absolutely air tight and on a summer's day when there was little wind. The air was drawn from the room through tubes containing potassium cyanid and the amount of formaldehyd estimated by determining the amount of cyanid remaining by precipitating with standard solution of silver nitrate and determining by titration the excess of silver nitrate. The results of the experiments (*Jour. Am. Chem. Soc.*, August, 1906), show that the various methods tested should be ranged in the following order so far as the amount of formaldehyd present in the air of the room is concerned:

1. Trenner-Lee retort. (Average yield, 46 per cent).
2. Autoclave. (Average yield, 42 per cent).
3. Permanganate-formalin, 300 gm. to 600 c.c. (Average yield, 37 per cent).
4. Sheet spraying. (Yield cannot be estimated).
5. Permanganate—diluted formalin in the proportion of 600 c.c. formalin, 300 c.c. water and 375 gm. permanganate. (Average yield, 32 per cent).
6. Kühn lamp, using 1,000 c.c. methyl alcohol as against 600 c.c. formalin in the other methods.

For simplicity and expedition, the permanganate-formalin method is preferable to all the others. Moreover, the quantity of formaldehyd gas can easily be increased by using more materials, which only requires a larger pail. The sheet-spraying method has the advantage of keeping up a steady supply of the gas so that the quantity at the end of twenty-two hours was only 2.75 per cent. less than that found ninety minutes after closing the room. Base quotes the conclusions of Werner (*Archiv. Hygiene*, 50, 305, 1904), as follows: 1. In all cases an average of 5 gm. of formaldehyd (absolute) per cubic meter (2.15 grains per cubic foot) should be present, with seven hours' action. 2. In exceptional cases, where loss of formaldehyd can not be avoided, or where numerous objects, or a good deal of matter of an organic nature which cannot be conveniently removed, are present in the room, the quantity should be doubled. 3. In all cases where the temperature is below 50° F., it should be raised; 68° to 77° F. is an efficient temperature. 4. The strength of the formalin should be known. Base's experiments indicated that there is danger of the formation of paraformaldehyd in the evaporation of formalin solutions which reduces the efficiency of some methods. On the other hand there is reason to think that the amount of moisture is a factor in the disinfectant action of formaldehyd, which is believed by some to settle in solution on the walls, furniture and other objects and to act in solution rather than in the form of gas. It is suggested that with the permanganate method more moisture might be introduced by the use of a tin or copper still. From the experiments of Base it appears that the amount of formaldehyd present in the air of the room was much lower than that required according to Werner, so that it is probable that the amount of material used in these experiments was too small for absolutely sure disinfection.

Marriages

Carl Groschner, M.D., Toledo, Ohio, to Miss Frieda Schillinger of Detroit, September 4.

Robert Clyde Lynch, M.D., to Miss Amanda Cecile Genin, both of New Orleans, August 23.

Sidney J. Eichel, M.D., to Miss Rose Bonn Reinhardt, both of Evansville, Ind., September 18.

Henry J. Perry, M.D., Boston, to Miss Winifred V. Freeman of Newark, N. Y., September 8.

Oliver Anderson Jeffrey, M.D., Weiser, Idaho, to Miss Maud Jeffrey of Chicago, August 25.

Harriette M. Collins, M.D., and William Arthur Lingham, both of Montrose, Colo., September 1.

John A. Cavanaugh, M.D., Chicago, to Miss Irene Cummings of Rock Valley, Iowa, September 12.

George W. Longenecker, M.D., Elsmore, Kan., to Miss Carrie L. King of Kansas City, Mo., August 13.

Robert Gardner Loring, M.D., Boston, to Miss Susan Douglas Merritt of Springfield, Ill., September 6.

Edwin Stanley Scharff, M.D., Plaquemine, La., to Miss May C. Milliken of New Orleans, September 18.

Clarence B. Norcross, M.D., Clairton, Pa., to Miss Clara Campbell of West Elizabeth, Pa., September 5.

Philip Merriman Egert, M.D., Holland Patent, N. Y., to Miss Allie Adelia Clarke of Utica, N. Y., September 6.

Nina W. Oliver, M.D., Lapeer, Mich., and Clifford S. McIntyre of Kalamazoo, at Walkerville, Ont., August 13.

Orin Russell Witter, M.D., Hartford, Conn., to Miss Gertrude Louise Clinton Hunt of Chaplin, Conn., September 5.

Elbert W. Blakeslee, M.D., Newport News, Va., to Miss Berkeley Ellyson of Norfolk, Va., at New York City, September 7.

Deaths

James H. Peabody, M.D. University of Georgetown, Washington, D. C., 1860; for many years a member of the American Medical Association; a charter member and once president of the Nebraska State Medical Association; some-time president of the Omaha-Douglas County Medical Society; a charter member of Omaha Medical College; emeritus professor of military surgery in the John A. Creighton Medical College; major and surgeon, U. S. V., in the Civil War, during which he served at Carver Hospital, Washington, and in charge of the U. S. Marine Hospital, St. Louis; as medical director of the Platte district of the Department of Missouri and later of the Department of the Platte; and then acting assistant surgeon, U. S. Army; formerly chief surgeon of the C. M. & St. P. Ry., Nebraska division, and consulting surgeon to the Union Pacific Ry.; one of the oldest practitioners of Omaha, died at St. Joseph's Hospital, Omaha, September 10, after an operation for prostatitis, from exhaustion, aged 73.

Everard D. Ferguson, M.D. Bellevue Hospital Medical College, New York City, 1868; a member and once vice-president of the American Medical Association; for three years surgeon at the Clinton prison, Dannemora, N. Y.; a member and first secretary of the New York State Medical Association and afterward president of the association; a member of the Rensselaer County Medical Society and the Medical Association of Troy and Vicinity; founder of the Samaritan Hospital, Troy, and one of the most prominent surgeons of New York State, who last April was tendered a dinner and presented with a loving cup by the Medical Association of Troy and Vicinity, of which he was the founder, died at his home in Troy, Septemer 8, from acute intestinal disease, after an illness of three days, aged 63.

John Theodore Heard, M.D. Harvard University Medical School, Boston, 1859, a member of the Massachusetts Medical Society; assistant surgeon of the Thirteenth Massachusetts Volunteer Infantry in 1861, and in May, 1862, made surgeon of the same regiment, and then successively brigade surgeon of the first brigade, second division, first army corps, surgeon-in-chief of the same division; medical director of the same corps; surgeon-in-chief of the artillery reserve of the army of the Potomac, and finally medical director of the fourth Army corps; who was taken prisoner during the battle of Gettysburg and was made brevet lieutenant colonel, U. S. V., March 13, 1865; a well-known physician of Boston, died at his summer home in Magnolia, Mass., September 2, aged 70.

Charles A. Ruggles, M.D. Vermont Medical College, Woodstock, 1854; a member of the State Board of Health of California for 15 years ; for four consecutive years president of that body; once vice-president of the National Conference of State Boards of Health, and selected to make a special report to that organization on leprosy; a delegate to the Pan-American Medical Congress in Mexico; a resident of Stockton, Cal., for 37 years, died at his home in that city, September 11, from heart disease, aged 77.

Leroy Milton Yale, M.D. Bellevue Hospital Medical College, New York City, 1866; a specialist on orthopedic surgery and pediatrics of New York City; at one time surgeon to Bellevue Hospital; a former editor of *Babyhood*, and an etcher of repute, died suddenly at his summer residence in Quissett, Mass., September 12, from cerebral hemorrhage, aged 65.

William Wilson Varick, M.D. Bellevue Hospital Medical College, New York City, 1876; a well-known practitioner of Jersey City; a member of the Hudson County Board of Health and visiting physician to the Jersey City Hospital, died at his home in Mersemere, Bergen County, N. J., September 8, after a prolonged illness from heart disease, aged 58.

Harvey Link, M.D. Kentucky School of Medicine, Louisville, 1862, a well-known practitioner of Millard, Neb., and for fifty years a practitioner of that place; a pioneer medical man of Douglas County, and at one time a member of the territorial legislature, died at his home in Millard, September 10, after an illness of one month, aged 82.

Melvin E. Page, M.D. Bellevue Hospital Medical College, New York City, 1889; a member of the Medical Society of the State of New York and of the Oswego Physicians' Society; a specialist on diseases of the eye and ear, died at his home in Oswego September 9, three days after an operation for appendicitis, aged 40.

Charles H. Hall, M.D. Pennsylvania Medical College, Philadelphia, 1855; for more than a quarter of a century a leading practitioner of Macon, Ga.; during the Civil War surgeon to the Forty-fifth Georgia Infantry, C. S. A., died at his home in Macon, from heart disease, September 9, after an illness of fifteen months, aged 70.

Edward W. Perkins, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1861; a practitioner of Dinwiddie County, Va., for 43 years; for many years physician to the Dinwiddie County Almshouse, died at his home near Reams Station, Va., September 4, after a protracted illness.

Wansor Wilson Weeks, M.D. Rush Medical College, Chicago, and Hering Medical College, Chicago, about 1898, of Steelton, Pa.; hospital steward during the Spanish-American War, died in the Sister's Hospital, Buffalo, N. Y., July 27, one week after an operation for appendicitis, aged 31.

William C. Hill, M.D. College of Physicians and Surgeons of Chicago, 1902; a member of the American Medical Association, and a prominent physician of Murphysboro, Ill., died at St. Andrew's Hospital, Carbondale, Ill., September 4, after an illness of five weeks, aged 25.

Alva F. Ward, M.D. Western Homeopathic College, Cleveland, 1860; said to have been the oldest practitioner of Jamestown, N. Y., died at his home in that city September 10, after an illness of a few hours, from injuries received in a fall from a street car, aged 72.

Jay W. Sheldon, M.D. Homeopathic Hospital College, Cleveland, 1864, formerly president of the New York State Homeopathic Medical Society, and a member of the State Board of Examiners, died at his home in Syracuse, N. Y., September 7, after a long illness, aged 69.

Frank Harvey Dunbar, M.D. University of Vermont Medical Department, Burlington, 1903, of Swanton, Vt., died at the Mary Fletcher Hospital, Burlington, September 5, after an operation for cholelithiasis, from which he had been suffering for two months, aged 37.

Maurice James Chase, M.D. Vermont Medical College, Woodstock, 1850, for half a century a prominent practitioner of Galesburg, Ill., died at the home of his daughter in that city, September 6, after a brief illness, due to the effects of a fall, aged 80.

Jane Hammond Murphy, M.D. Woman's Medical College of New York Infirmary, New York City, died at the Job Haines Home for the Aged, Bloomfield, N. J., from paralysis of the throat, March 28, after an illness of two or three days, aged 85.

George W. Fellows, M.D. Vermont Medical College, Woodstock, 1851, for many years a practitioner of Kewanee, Ill., died at his home in Creston, Iowa, September 6, from Bright's disease, after a long illness, aged 78.

Cecil A. Butler, M.D. Medical College of Indiana, Indianapolis, 1901, of Manatee, Fla., died at the home of his parents near Huntsville, Ind., from cerebrospinal meningitis, September 6, after a short illness, aged 30.

James F. Kelly, M.D. Medical Department of Western Reserve University, Cleveland, 1896, formerly assistant superintendent of the Cleveland State Hospital, died suddenly in New York City September 4.

William A. Smith, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1881, of Atlanta, Ga., died at the Tabernacle Infirmary in that city, September 8, after an illness of about three weeks, aged 48.

Elmer Beecher, M.D. Castleton (Vt.) Medical College, 1835; state senator from Chittenden County in 1860, died at his home in Burlington, Vt., July 16, from senile debility, after a short illness, aged 95.

William D. Walradt, M.D. Albany (N. Y.) Medical College, 1878; a practitioner of Castleton, N. Y., for more than 25 years, died in the Albany City Hospital, September 6, after an illness of two weeks.

Andrew J. Vann, M.D. Medical College of Georgia, Augusta, 1855, one of the oldest and most prominent practitioners of De Kalb County, Ala., died at his home near Porterville, September 4, aged 74.

John Stolze, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1865, of Reading, Pa., a surgeon during the Civil War, died at Lake Geneva, Wis., September 11, after a lingering illness, aged 73.

William A. Smith, M.D. Medical College of Alabama, Mobile, 1881. of Anniston, Ala., died at the home of his mother in Mexia, Ala., September 5, from tuberculosis, after an illness of several months.

Joseph H. Drake, M.D. Homeopathic Medical College of Missouri, St. Louis, 1874, died at his home in Des Moines, Iowa, September 8, after an illness of two years, from heart disease, aged 60.

Charles M. Billings, M.D. New York Medical College, New York City, 1867, one of the oldest practitioners of Nashua, Iowa, died suddenly from heart disease, September 4, at his home, aged 68.

Percy Earnest Wagar, M.D. Detroit College of Medicine, 1894; treasurer of the Island of Negros, P. I., and later transferred to Manila, died in Manila August 12, from hyperpyrexia, aged 36.

James D. Seymour, M.D. Harvard University Medical School, Boston, 1872, a practitioner of Whately, Mass., since 1878, died in a sanitarium in Brattleboro, Vt., September 11, aged 56.

Edgar A. Brooke, M.D. University of Maryland School of Medicine, Baltimore, 1887, formerly of Dillon, Mont., died at Bonner, Mont., September 3, from heart disease, after a short illness.

William C. Hamilton, M.D. Homeopathic Medical College, Philadelphia, 1861, for forty years a practitioner of Philadelphia, died at his home in that city, September 5, aged 63.

Charles B. Flint, M.D. New York Homeopathic Medical College and Hospital, New York City, 1890, died at his home in Watertown, N. Y., September 8, after a brief illness.

C. F. Champion, M.D. Louisville (Ky.) Medical College, 1891, a pioneer practitioner of Enid, Okla., died at Wichita, Kan., September 9, after an illness of several years.

Samuel Fernald, M.D. Hahnemann Medical College, Philadelphia, 1884, died at his home in Philadelphia from laryngitis, July 30, after an illness of nine days, aged 79.

William F. Wallace, M.D. Columbus (Ohio) Medical College, 1880, died at his home in Rochester, N. H., September 5, from heart disease, aged 56.

William H. Clark, M.D. Beach Medical College, Indianapolis, 1886; of Indianapolis; died suddenly in that city, from heart disease, August 30, aged 76.

Marcus P. Anthony, M.D. Atlanta (Ga.) Medical College, 1892, a practitioner of Lake Butler, Fla., died at Blue Ridge, Ga., August 24.

Narcissus Garand, M.D. Toledo (Ohio) Medical College, 1885, died at his home in Toledo September 6, from Bright's disease, aged 66.

Joseph Wolfgarten, M.D. National Medical University of Chicago, 1895, died at his home in Chicago, September 10.

Deaths Abroad.

Isidor Neumann von Heilwart, M.D., formerly professor of dermatology and syphilography at Vienna, died August 31, aged 74. He was professor of these specialties from 1873 to 1903, when he reached the age limit. His manuals on dermatology and syphilis and his great atlas of cutaneous affections are known everywhere. He has trained a number of promising pupils, among whom may be mentioned E. Finger, Rille, Glück, Ehrmann and Matzenauer.

A. Herzen, M.D., professor of physiology at Lausanne, died August 24, aged 67. He was born in Russia, but his scientific work was done in Switzerland. His published works were mostly devoted to the physiology of the stomach and brain, with numerous popular works on physiology, hygiene and school inspection. His pamphlet, "Hygiène et Moralité," has been translated into many languages, and the German translation has been officially commended to students in Germany. He wrote with equal fluency in the five principal languages of Europe.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries on this column must be accompanied by the writers's name and address, but the request of the writer not to publish name or address will be faithfully observed.

THE REST CURE FOR NEURASTHENIA.

——, Fla., Aug. 31, 1906.

To the Editor:—I would appreciate advice concerning any, or the best literature concerning the Weir Mitchell treatment of neurasthenics. I understand he has no medical work out on this subject. I would appreciate it if you would put me on the right track to get a clear understanding in print of the so-called rest cure treatment.

N. A. P.

Answer.—The so-called "rest cure," employed with such success in properly selected cases of general nervous prostration, especially in thin, anemic, run-down women, and consisting primarily of a judicious application of isolation or seclusion, forced feeding, and passive exercise, is the outgrowth of the early observations of Samuel Jackson. It is to Weir Mitchell, however, that we are specially indebted for the elaboration and scientific systematizing of this line of therapy, and hence it is not infrequently spoken of as the "Weir Mitchell treatment." In 1877 appeared his little book, "Fat and Blood," in which the treatment was first systematically outlined. The book is still the authority on the subject. In 1881 he again elaborated the treatment in his "Lectures on Diseases of the Nervous System, Especially in Women," (second edition, 1885). Dr. Mitchell has discussed the treatment incidentally in many of his later writings. In 1883 the rest cure was strongly commended, elaborated, and made popular in Europe by W. S. Playfair of London in "The Systematic Treatment of Nerve Prostration and Hysteria." These essays of Mitchell and Playfair placed the treatment on a firm, scientific basis. Since this introduction of the rest cure it has undergone many minor modifications at the hands of many physicians, and its literature has grown enormously. The explanation of these numerous modifications lies in the fact that the diseases, such as neurasthenia, for instance, in which faulty metabolism is so obvious, are not all regarded in the same way by all physicians. A general outline of the treatment will be found in any of the larger works on nervous diseases, especially those of Beard, "Nervous Exhaustion;" Mills, "Diseases of the Nervous System;" Wood, the article on "Neurasthenia" in vol. v of Peffer's System; Oppenheim, "Diseases of the Nervous System;" Dana, "Text-Book of Nervous Diseases;" Mettler, "Diseases of the Nervous System;" and others. The current literature on the subject is so extensive that an adequate list of it here would occupy too much space. Our correspondent is referred to the Index to Current Medical Literature which appears in The Journal in the last issues of June and December.

The purpose of the treatment is "to renew the vitality of feeble people by a combination of entire rest and excessive feeding, made possible by passive exercise obtained through the steady use of massage and electricity." Six weeks or more of seclusion from friends and relatives are enjoined. Absolute mental and physical rest in bed is insisted on. Daily massage, bathing (where partial rest is in use) and electricity are administered. Selected, regularly-given food, and appropriate tonics, with symptomatic medication complete the régime. It is obvious that there is possible a wide latitude in the exhibition of this line of treatment. For this reason it is capable of doing great harm as well as great good. It can not be employed by any rule-of-thumb. The principles underlying it and the ends sought for in the particular case in hand must be clearly defined in the medical attendant's mind. This being given and the cases carefully selected, we have in the so-called rest cure of Weir Mitchell, a most powerful and successful therapeutic measure.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Sept. 15, 1906:

Wales, Philip G., surgeon, on the expiration of his present leave of absence, ordered to Fort Wayne, Mich., for duty.

Woodall, Wm. P., asst.-surgeon, granted ten days' leave of absence.

Torney, Geo. H., deputy surgeon-general, having completed the duty for which he was ordered to Washington, D. C., will return to his station.

Brechemin, Louis, Jr., asst.-surgeon, ordered to proceed from *Camp of Instruction*, American Lake, Washington, to Seattle, Wash., for duty on the transport *Buford*, en route to Honolulu, H. T.

Crabtree, Geo. H., asst.-surgeon, advanced to the rank of captain from Sept. 5, 1906.

Lyster, Theo. C., asst.-surgeon, left Ancon, Canal Zone, Isthmus of Panama, en route to the United States, on leave of absence.

Noble, R. E., asst.-surgeon, leave of absence further extended 21 days.

Ragan, Chas., asst.-surgeon, the leave of absence granted in S. O. p, Sept. 3, 1906, Army and Navy Gen. Hosp., Hot Springs, Ark., was extended five days.

Lewis, Wm. F., asst.-surg., ordered to proceed from Chicago, to Fort Sheridan, Ill., for temporary duty.

Ashford, B. K., asst.-surgeon, ordered to accompany Second Battalion, Corps of Engineers, from Camp of Instruction, Mt. Gretna, Pa., to Washington Barracks, D. C.

Murray, Alexander, asst.-surgeon, granted 10 days' leave of absence.

Woodruff, Chas. E., surgeon, granted 15 days' leave of absence.

Porter, E. H., contract surgeon, arrived at Fort Reno, Okla., for temporary duty.

Stearns, C. H., contract surgeon, left Fort Monroe, Va., on 7 days' leave of absence.

Ware, Wm. H., dental surgeon, left San Francisco, for Manila, P. I., for duty in Philippines Division.

Jenkins, F. E., contract surgeon, left San Francisco, for Manila, P. I., for duty in Philippines Division.

Jordan, E. H., contract surgeon, left San Francisco, for Manila, P. I., for duty in Philippines Division.

Baker, C. L., contract surgeon, leave of absence extended one month.

Sanford, J. L., contract surgeon, leave of absence extended one month.

Stone, F. P., dental surgeon, granted leave of absence for 14 days.

Van Kirk, H. H., contract surgeon, granted leave of absence for one month.

Wolven, F. H., dental surgeon, will proceed from Fort Trumbull, Conn. (via Fort Jay, N. Y., for temporary duty for a period of 14 days) to Fort Monroe, Va., for temporary duty for a period not to exceed 2 months.

Mead, J. A., contract surgeon, returned to duty at Watertown Arsenal, Mass., from leave of absence.

Stanton, S. C., contract surgeon, left Headquarters, Dept. of the Lakes, Chicago, on 6 days' leave of absence.

Richardson, W. H., contract surgeon, returned from duty with Field Hospital, Camp of Instruction, Fort Benjamin Harrison, Ind., and assigned to duty to accompany 10th Battalion, Field Artillery, to Michigan City, Ind., for target practice.

Hereford, J. R., contract surgeon, left Fort Caswell, N. C., for Fort Screven, Ga., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending September 15, 1906:

Moore, J. M., surgeon, detached from the *Puritan* when out of commission; to *Franklin*, Navy Yard, Norfolk, Va.

Bell, W. H., surgeon, detached *Nevada*, to home and wait orders.

Lumsden, G. P., surgeon, detached *Minneapolis* when out of commission; to home and wait orders.

Payne, J. H., Jr., P. A. surgeon, detached *Arkansas*; to home and wait orders.

Iden, J. H., P. A. surgeon, detached *Florida*; to home and wait orders.

Geiger, A. J., P. A. surgeon, to Naval Hospital, Mare Island, Cal.

Farwell, W. G., asst.-surgeon, detached *Worden* to *Connecticut*.

Lee, A. E., asst.-surgeon, detached Naval Hospital, Mare Island, Cal., to Medical School, Washington, D. C.

Mears, J. B., asst.-surgeon, detached *Minneapolis* to *Worden*.

Percy, H. T., surgeon, detached Naval Hospital, Yokohama, Japan, to home and wait orders.

Minter, J. M., asst.-surgeon, to Naval Hospital, Norfolk, Va.

Huff, E. P., acting asst.-surgeon, to Naval Hospital, New York.

Steele, J. M., medical inspector, to Naval Recruiting Office, Cleveland, Ohio.

Hibbett, C. T., medical inspector, to U. S. R. S. *Franklin*.

Wentworth, A. R., surgeon, to U. S. S. *Louisiana*.

Schaller, W. F., asst.-surgeon, and Longabaugh, acting asst.-surgeon, to the U. S. Naval Medical School, Washington, D. C., Sept. 29, 1906.

Munger, C. B., asst.-surgeon, to Naval Station, Guam, L. I.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending September 12, 1906:

Geddings, H. D., asst. surgeon-general, granted leave of absence from Sept. 15 to 30, 1906, both days inclusive.

Sawtelle, H. W., surgeon, placed on "waiting orders," to date from Sept. 5, 1906.

Godfrey, John, surgeon, directed to report to chairman of board of medical officers, Washington, D. C., Sept. 13, 1906, for physical examination.

Wertenbaker, C. P., surgeon, granted leave of absence for seven days, from Sept. 15, 1906.

Wickes, H. W., P. A. surgeon, granted two days' leave of absence, from Sept. 11, 1906.

Earle, B. H., P. A. surgeon, relieved from duty at Columbia River Quarantine Station and directed to proceed to Charleston, S. C., and assume command of the service.

Smith, F. C., asst.-surgeon, granted leave of absence for two days, from Sept. 4, 1906, under Paragraph 191 of the Regulations.

Fogarty, J. N., acting asst.-surgeon, granted leave of absence for seven days.

Kimset, W. A., acting asst.-surgeon, granted leave of absence for thirty days, from Sept. 10, 1906.

Jackson, J. M., Jr., acting asst.-surgeon, granted leave of absence for ten days, from Aug. 14, 1906.

Jackson, J. M., Jr., acting asst.-surgeon, granted leave of absence for four days, from Sept. 2, 1906.

McConnell, A. P., acting asst.-surgeon, granted four days' leave of absence, from Sept. 10, 1906.

APPOINTMENTS.

Dr. William W. Miller, of Tennessee, commissioned (recess) as asst.-surgeon, Public Health and Marine-Hospital Service, Sept. 4, 1906.

Dr. Robert A. C. Wallenberg, of Michigan, commissioned (recess) as asst.-surgeon, Public Health and Marine-Hospital Service, Sept. 4, 1906.

BOARD CONVENED.

A board of officers was convened to meet at the bureau, Washington, D. C., Sept. 13, 1906, to determine whether or not the physical condition of Surgeon John Godfrey is such as to entitle him to "waiting orders." Detail for board: Asst. Surgeon-General H. D. Geddings, chairman; Asst. Surgeon-General J. M. Rager; Asst. Surgeon-General J. W. Kerr, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the surgeon-general Public Health and Marine-Hospital Service during the week ended Sept. 14, 1906:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, Aug. 25-Sept. 1, 3 cases.
North Dakota: State, July 1-31, 8 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, July 21-28, 1 case.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, June 1-30, 177 deaths.
Brazil: Bahia, July 28-Aug. 11, 6 cases, 2 deaths; Pernambuco, July 15-31, 4 deaths.
Gibraltar: Aug. 19-26, 1 case.
Italy: General, Aug. 8-16, 3 cases.
Panama: Colon, Aug. 19, 3 cases.
Turkey: Constantinople, Aug. 12-19, 1 death.

YELLOW FEVER.

Cuba: Habana, Aug. 10, 1 case.
Guatemala: Gualan, 2 cases, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, July 14-28, 126 cases, 115 deaths; Provinces, 968 cases, 704 deaths.

PLAGUE.

Australia: Cairns, July 14-21, 1 case; Sydney, July 7-14, 1 case, 1 death.
Brazil: Bahia, July 28-Aug. 4, 1 case, 1 death; Rio de Janeiro, July 7-15, 2 cases.
Egypt: Alexandria, Aug. 10-14, 3 cases, 2 deaths; Port Said, Aug. 11, 2 cases; Suez, Aug. 11-16, 3 cases, 2 deaths; Garbieh Province, Aug. 13, 1 case, 1 death.
India: General, July 14-21, 959 cases, 796 deaths.
Japan: Formosa, Aug. 1-10, 3 cases, 6 deaths.

Society Proceedings

COMING MEETINGS.

Medical Association of District of Columbia, Washington, Oct. 2.
Idaho State Medical Society, Lewiston, Oct. 4-5.
Colorado State Medical Society, Denver, Oct. 9-11.
Delaware State Medical Society, Wilmington, Oct. 9.
Medical Society of Virginia, Charlottesville, Oct. 9-11.
Kentucky State Medical Association, Owensboro, Oct. 10-12.
Vermont State Medical Society, Barre, Oct. 11-12.
American Association of Railway Surgeons, Chicago, Oct. 17-19.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

Fifteenth Annual Meeting, held in Buffalo, N. Y., Sept. 11-14, 1906.

The President, Lieut.-Col. Albert H. Briggs, N. G., N. Y., in the Chair.

The meeting was called to order by the president, who informally welcomed the association to Buffalo and gave notice that the formal welcome would be extended at a meeting to be held the same evening in the Y. M. C. A. building.

Reports.

The executive council reported the election of members during the year, and submitted the proposed amendments to the constitution providing for the establishment of a class of affiliated members containing the United States pension examining surgeons, the medical officers of the United States revenue service, and of the other government services and other persons interested in military medicine and surgery; providing that the corresponding members should report at the end of each year to the secretary, informing him of any change of address or title, the penalty for failure to so report being suspension, and providing that the honorary members should report to the secretary at the end of each year notifying him of any change of address or location. The executive council also recommended a change in the by-laws whereby the name of the official organ should be changed from the *Journal of the Association of Military Surgeons of the United States* to *The Military Surgeon*, with the subtitle reading, *The Journal of Military Surgeons of the United States.*

During the year 91 members have been added and 9 have died.

Award of Enno Sanders Prize.

The Enno Sanders prize medal was awarded Major James Evelyn Pilcher, the secretary, whose essay was entitled, "The Best Training of the Medical Officer of the State Forces to Qualify Him for Local Service and Mobilization with National Troops." The author summed up the subject as follows:

1. There is need of special study on the part of the medical officers of the National Guard and state troops to fit themselves for work in their own forces, not only in local service, but in connection with the national services in time of war and in peaceful mobilization.

2. The most essential feature in the effort to secure harmonious action with other state troops and with the national forces is uniformity of training, particularly along the lines of medico-military administration.

3. The most important element of the medical officer's training is confessedly the highest grade of efficiency in military hygiene, medicine and surgery. But of great importance and overlapping these to a considerable degree is a familiarity with medico-military administration, without which, indeed, the proper practice of military medicine, surgery and hygiene will be impossible. The medical officer must become deeply acquainted with the proper methods of selecting recruits; he must be able to control his men, commanding respect, not only of the hospital corps, but of the sick under his direction; he must be an authority beyond dispute on camp location and organization; he must understand the principles and practice of field hospital construction and composition; he must have experience in the instruction and drill of the sanitary soldiers, and be must be prepared to protect his service and assist his comrades by a thorough acquaintance with the records of his department.

4. To crown all these and to add to his efficiency in every respect, there must have developed in him an enthusiasm based on loyalty to the nation and interest in his profession, which shall impel him at all times to labor unceasingly and incessantly for the good of the service which has honored him with its commission.

By pursuing, then, these lines of work and thought, the medical officer of the National Guard of the United States will find his department *semper paratus* for all the emergencies of peace within the limits of the commonwealth which he is serving, and ever ready, in case the dark clouds of national or international conflict should overshadow the horizon of the nation's glory, to at once unite and coalesce with the forces which the mother country has maintained as a nucleus about which all military operations shall center.

Public Meeting.

The public meeting to welcome the association was held in the auditorium of the Young Men's Christian Association building on the evening of September 11, chairman of the committee on arrangements, Hon. Herbert P. Bissell, presiding. Addresses of welcome were delivered on the part of the city o: Buffalo by the acting mayor, Hon. Louis P. Fuhrman; on be half of the medical profession by Major Roswell Park; on be half of the state of New York by Hon. Rowland B. Mahaney and on behalf of the Association of Military Surgeons of th United States by the president of the association, Lieut-Co Albert H. Briggs.

Foreign Delegates.

The foreign delegates were then presented with the insigni of the association by the secretary, who accompanied eac presentation with appropriate remarks.

The following delegates to the association from foreig countries were present:

China—Surgeon-Captain Ho Ken Yuen, Imperial Navy; Surgeo: Major Tchau Shi Wa, Imperial Army, and Surgeon-Captain K Sha Chow, Imperial Army.

Mexico—Major Alejandro Ross, C.M.-M.M.

Great Britain—Major Arthur Gaskell, staff surgeon, Royal Nav: Lieutenant-Colonel William Grant Macpherson, Royal Army Medic Corps and Colonel William John Read Rainsford, Royal Arı Medical Corps.

India—Major W. H. W. Elliot, I. M. S.

Guatemala—Colonel Ramon Bengoecha, chief of the Medical I partment of the Army.

Nicaragua—Surgeon-General J. Lysandro Medina.

France—Colonel Henri Mareschal, chief surgeon of the garris of Paris.

Canada—Lieutenant-Colonel George Henry Porke and Major H. Delaney.

Italy: Lieutenant Giacomo Tartaro, surgeon Royal Army Reser

Election of Officers.

The following officers were elected: President, Col. Vale Havard, assistant surgeon-general, U. S. Army; vice-pre dents, Rear Admiral Presley M. Rixey, surgeon-general U. Navy; Col. George Tully Vaughan, late U. S. P. H. and M. Service, and Col. Joseph K. Weaver, N. G. Pa., Norristov Pa.; secretary, Major James Evelyn Pilcher, U. S. A., Carlis Pa. (re-elected); assistant secretary, Capt. J. Carlisle Vries, N. G. N. Y.; treasurer, Major Herbert A. Arnold, N. Pa. (re-elected).

After discussion of Atlantic City, Denver, Pittsburg, M waukee and the Jamestown Exposition, it was decided to h the 1907 meeting in Norfolk, Va., at a date to be fixed by executive council.

(*To be continued.*)

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, held at Salt Lake City, Uta Aug. 30 Sept. 1, 1906.

(*Continued from page 885.*)

Principles and Mechanics of Abdominal Drainage.

Dr. R. C. Coffey, Portland, Ore., presented the follo deductions: "1. Fluids are rapidly absorbed by the perito cavity; crude or granular matter only through lymph sı at the diaphragm. 2. A drainage tract always contains m organisms. 3. Any form of drainage is isolated from the peritoneal cavity in six hours. 4. A drain causes a flo serum by irritation which is profuse in proportion to amount of drain within the peritoneal cavity. 5. This is delivered to the surface only in proportion to the amou drainage passing out through the wound. 6. Serum an accumulate around drainage only when the drainage a outlet is less than that contained inside, or is not suffici extensive to deliver the fluid before it is filled with and granulations. 7. Blood and pus are never found i neighborhood of a properly applied drain after 48 hour The flow of serum dissolves blood clots and thick pus, le the gauze clean and white by the time it ceases. 9. Th of serum does not occur to any extent in formed abscess ties; therefore, blood and pus are not well drained from by capillary drainage. 10. A tube will drain a walled and will drain the peritoneal cavity under the influence of gravity, but not otherwise. 11. A single tube is much more likely to be choked by intestines and omentum than two or more parallel tubes. 12. Gauze drains in proportion to the amount coming through the opening, and will only drain when it is in contact with dressings or clothing, or when its outside end is at a lower level than the cavity to be drained. 13. Small gauze drains are likely to be choked at the exit, unless covered by a tube or protective. 14. There are three cavities of the peritoneum to be drained, the right and left flank separated from each other by the spinal column, and the pelvis separated from the flanks by the psoas muscles. Either flank holds more fluid, and is an inch deeper than the pelvis, and its bottom is more than four inches below the top of the divide made by the psoas muscle on which the appendix rests. The body must be elevated to an angle of 51 degrees to bring the bottom of the flank on a level with the divide, and 60 or 70 degrees to properly drain by the Fowler position. The entire cavity can be drained by gravity by a lateral position. 15. Drainage should always be in contact with the parietal peritoneum on one side. A line drawn from the center of the perineum to the tip of the shoulder passes through the pelvis and deepest part of the flank and on the right side through the appendix. These diagonal lines we call the right and left drainage lines. Drainage should always be placed external to these lines or just above the pubic bone. 16. If only one of the three cavities is infected, it alone should be drained."

Massage of the Heart in Apparent Death from Anesthetics.

Dr. D. S. Fairchild, Des Moines, Iowa, reported a case of massage of the heart in apparent death from anesthesia, and reviewed the literature of 24 other reported cases. He spoke of the time after arrest of the heart when positive results might be expected. He discussed the best route for approaching the heart for the purpose of massage.

Technic of Laminectomy.

Dr. Harry M. Sherman, San Francisco, discussed the relative merits of the simpler form of the operation as contrasted with the osteoplastic method, endeavoring to answer the question: Is the complex operation, with its sacrifice of motor nerves and its cutting of muscles for the sake of saving the laminæ, worth while? In general, this question was answered in the negative, but certain conditions were pointed out, as in the case of pressure paraplegia of vertebral tuberculosis with a right angle kyphos, in which the preservation of the laminæ, as a support for the longitudinal spinal muscles, might be essential for the complete and permanent relief of pressure on the cord, and in such cases the osteoplastic method might find a satisfactory use.

Peripheral Versus Intracranial Operations for Tic Douloureux.

Dr. Charles H. Mayo, Rochester, Minn., said that one of the most distressing diseases is facial neuralgia. More methods of internal, external and surgical treatment have been advanced for its cure than for any other condition. In 1896 Dr. Abbe reported a case in which he interposed mechanical obstruction to the reunion of the nerve by placing rubber tissue over the foramina of exit of the nerves in the skull. For nine years Dr. Mayo has employed silver screws to obstruct the infraorbital foramen after torsion, removal of the nerve by the Thiersch method. For a less period the inferior dental canal has been obstructed with equal success. While not as effectual as the intracranial operation, because of the numerous branches, still the method controlled the two branches most commonly affected. It can be employed on many who would not submit to the intracranial operation, with its attendant mortality and occasional failures to cure.

Aneurismal Varix.

Dr. J. Clark Stewart, Minneapolis, reported an interesting case of large aneurismal varix of the forearm, and exhibited photographs. He presented a history of such cases, and described the operative methods used. He likewise discussed the proper treatment of the lesions in the upper and lower extremities, and considered the radical difference in the conditions present.

Sarcoma of the Male Breast.

Dr. F. Gregory Connell, Salida, Colo., reported this case. The patient was 25 years of age. The mother had both breasts removed for cancer. There was no history of traumatism. The tumor started in a congenital discoloration of the skin near the right nipple, and in three months had grown to the size of a walnut. The breast and axillary glands were removed. The healing of the wound was perfect. Two months after discharge the patient presented himself for examination, and a keloid was found to have developed in the cicatrix. When last seen, six months later, the keloid was smaller, and there was no evidence of a recurrence of the sarcoma. Histologic examination showed the tumor to be a spindle-celled sarcoma.

Malignant Complications and Degenerations of Uterine Fibromyomata.

Dr. Charles W. Oviatt, Oshkosh, Wis., presented the following conclusions: 1. Women suffering from fibroid disease of the uterus incur a greater risk in allowing it to remain than in having it removed by a competent surgeon. 2. The fact that adenocarcinoma of the body of the uterus occurs much more frequently in cases of fibroid tumor than does cancer of the cervix, leads him to believe that there must be a direct causative relation between fibroid tumors and cancer of the body of the uterus. 3. Every fibroid tumor removed should be subjected to careful laboratory study, no matter what its gross appearance.

Treatment of Tuberculosis of the Kidney and Bladder by Nephrectomy.

Dr. Leonard Freeman, Denver, after detailing 14 cases on which he had operated for tuberculosis of the kidney and bladder, drew the following conclusions: 1. Tuberculosis of the urinary tract very often begins in the kidney, attacking the bladder secondarily. 2. It is usually at first unilateral. 3. Medical or climatic treatment is unsatisfactory in most cases. 4. The ideal treatment is early nephrectomy, providing there is one sound kidney. 5. Tuberculosis elsewhere, unless far advanced, is not a contraindication to operation. 6. Tuberculosis of the bladder derived from one kidney is positively benefited by nephrectomy, and can seldom be cured without it. 7. The demonstration of tubercle bacilli in the urine often fails. 8. The removal of the ureter is not ordinarily indicated. If sinuses result, they nearly always heal with time.

Dr. A. H. Kerr, Salt Lake City, reported a case of ureteral cystostomy or uretero-vesical implantation.

Operative Procedures for Chronic Urethritis.

Dr. A. C. Stokes, Omaha, discussed the incurable gonorrheas in the male. He gave the reasons why this disease is so often not cured. He spoke of the havoc of gonorrhea in civilization. A minute anatomic and pathologic diagnosis must be aimed at, and having once arrived at a definite diagnosis as to the position of the infection, we should resort to the methods that are most applicable to its treatment. He spoke of external urethrotomy in its relation to chronic gonorrhea, and of operating for vesiculitis, prostatitis and old infections in the vas deferens. He reported 4 cases where chronic gleet was treated by external urethrotomy and cauterization of the prostatic follicles and urethra. He discussed vasotomy in the treatment of infections of the seminal vesicles and epididymis. He described the technic of the latter procedure and reported 5 cases in which he had operated.

The following papers were also read: "The Control or Elimination of Pneumothorax During Operations on the Chest" (with lantern slides), by Dr. Dudley Tait, San Francisco; "Abdominal Contusions," by Dr. William Jepson, Sioux City, Iowa; "A Point in the Technic of Ligating the Appendix in Appendectomy," by Dr. Jabez N. Jackson, Kansas City, Mo.; "Intestinal Suture," by Dr. A. F. Jonas, Omaha; "Complications and Sequelæ of Prostatectomy," by Dr. J. N. Warren, Sioux City, Iowa.

The election of officers was reported in The Journal, September 8, page 788.

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

(Continued from page 886.)

SECTION ON STATE MEDICINE.

Hygiene of the Home.

Dr. John J. Cassidy, Toronto, a member of the Ontario Board of Health, offered in his paper many practical suggestions for the perfection of the hygiene of the home. The first requirement is a dry site, and the ideal situation is one in which the sunlight may penetrate at some time during the day into every room of the house. The basement should extend beneath the entire house, with windows extending nearly to the top of the wall, so that space may be given for the expulsion of gases arising from the decaying and putrefaction that is continually going on in the soil. A floor of six inches of closely packed clay forms a good resistant and is more impervious to the passage of gases than solid concrete. Moderately hard well-burned brick is, he believes, the most suitable material for outside walls, and a coating of paint will prevent rain from soaking in the brick. Good plaster is the best for walls, and wall paper should be avoided. Kalsomine offers much less obstruction than paint or wall paper to the air. Ample openings for light and a good circulation of air are needed; all doors and windows should extend high up toward the ceiling. The advantage of a chimney in a room which facilitates the escape of impure air and the entrance of fresh air was referred to. The basement and the kitchen, which are in a way the most important parts of the dwelling, should naturally receive more frequent attention than the living rooms, where presumably organic filth is less likely to gain access. Cleanliness in the kitchen is necessary, sewage should be kept under cover and frequently removed, and the rooms should be ventilated automatically. The bed chamber should contain no carpets, but only a washable rug near the bed. The waxed floor should be mopped every morning with a damp cloth, and the walls painted with white enamel paint. The window curtains should be of cotton or some washable fabric, and frequently laundered.

Medical Inspection of Schools.

Dr. Helen MacMurchy, Toronto, referred to the government indorsement in Great Britain of the medical inspection of schools and pupils, which the country had consequently adopted. The day had come when there must be the greatest possible coöperation between the teacher and the medical profession, and it was important that the medical inspection should be made by qualified medical practitioners who should be properly remunerated. Inspectors need special training and many of the colleges are now giving instruction along this line. The first step in advancement consists in the modification of existing conditions, and both the pupil and the parent should be impressed with the importance of cleanliness, pure food, pure air and good health. Children of the poor should get enough to eat to bring about that development necessary for good health and consequent good citizenship. The importance of hygiene can not be overestimated.

Mr. William Scott, B.A., principal of normal schools, held that compulsory school attendance must necessarily be supplemented by a compulsory school inspection law for effective dealing with infectious diseases. He held that it was not the place of the teacher to perform the medical inspection; the teacher can do much toward making the pupil more careful, ambitious, truthful and earnest in intellectual, moral and physical conditions, but the teacher should be well trained to understand the significance of a sound mind in a sound body. Medical inspection will do much to aid the teacher, not only by supporting his authority, but by suggestions which will assist him to maintain the health of the pupils under him at the highest possible standard. He said that an educational campaign is necessary, not only to deal with infectious diseases, but to improve those physical defects, which experience has shown to be present in a large percentage of school children, and which can be minimized, if not entirely removed. He emphasized the importance of the education of the teacher along those lines which should enable him to observe significant hygienic conditions.

Water-Gas Poisoning.

Prof. John Glaister, Glasgow, discussed the questions of the risks to health and life from the recent adoption by municipalities of carburetted gas, as a substitute for, and an admixture of the common coal gas. In Great Britain, the problems arising from the use of water gas resulted in the referring of the question to a Department Commission, and its findings in the circumstances were declared to be both reasonable and fitting. Should the adoption of carburetted water gas become general, it should be under state regulations, such as pertain in the Public Health Act to the internal drainage systems in our homes. It would be most desirable that before such gas be put in a new building, the joints and fixtures should be inspected and that in all old buildings, the existing fittings should be initially inspected and that in all buildings used for dwelling places, the power of periodical inspection by the gas authorities should be given and its exercise enforced on similar lines to those given the water companies.

International Sanitary Protection.

Dr. Peter H. Bryce, Ottawa, Chief Medical Officer of the Department of the Interior, opened this discussion by a paper on "International Coöperation in the Inspection of Emigrants and Immigrants." He referred to the problems arising from pauperism, war, commercial disaster, industrial revolutions in European countries and spoke of the continued flow of emigration to Canada. Medical inspection is most imperative and the practical coöperation which exists between England, Canada and the United States, have resulted in the development of a most desirable class of immigrants. A wise recommendation to be urged by representative medical men is that which will require specific international medical inspection in connection with immigration, and the rigid recognition and enforcement of laws regarding the influx of undesirables.

State Control of Health.

Dr. Jennie G. Drennan, St. Thomas, pleaded for a fuller recognition, by the state, of its duty toward the health of the people. She believed that in the scope of its health department should be included all hospitals, asylums and public institutions. The public should be taught how to live and if the state were as anxious to preserve health as it is to preserve peace, this desirable result would soon be attained. She deplored the tendency on the part of the public to trust its health to "patent medicines," and contended that men had been taught everything else but how to live properly. She emphasized the responsibility of the state in this direction, and urged that those having to do with the preservation of the public health should constitute an organized army of men and women made fully acquainted with their official duties by special educational courses.

Surgeon Rell M. Woodward, U. S. P. H. and M.-H. Service, Boston, outlined what had been done on the part of the United States in the medical inspection of immigrants, and described the application of rigid methods of sanitary inspection which were instituted at Rotterdam. In this inspection hot baths are given by the attendants, as the emigrants are often totally ignorant of baths and their purposes; after this, the hair of the male emigrants is cropped, and that of the female emigrants carefully combed and inspected. After a detention of five days, if no disease of any kind develops, the emigrants are allowed to proceed on their journey. Dr. Woodward believes that more attention should be given to immigrants passing through a country and that greater power should be given to the health officers of the country of destination.

Food Inspection and Supervision.

Mr. A. McGill, B.A., assistant analyst of the Inland Revenue Department, Ottawa, in a paper entitled, "Some Remarks on Food Preservatives with an Idea of Legislation in the Matter," remarked that the presence of a preservative in a product should always be announced on the label, and that the discrimination of the purchaser to protect himself by this publicity alone can not be trusted. He mentioned salt, sugar, wood smoke and alcohol as being the least injurious of the preservatives commonly used. In his report on preservatives, compiled for the dominion government, he recommended:

(a) That the use of formaldehyd or formalin, or preparations thereof, in foods or drinks, be absolutely prohibited, and that salicylic acid be not used in a greater proportion than one grain per pint in liquid food, and one grain per pound in solid food; its presence in all cases to be declared.

(b) That the use of any preservative or coloring matter whatever in milk offered for sale in the United Kingdom be constituted an offense under the Sale of Food and Drugs Acts.

(c) That the only preservative which it shall be lawful to use in cream be boric acid, or a mixture of boric acid and borax, and in the amount not exceeding 0.25 per cent., expressed as boric acid; the amount of such preservative to be notified by a label on the vessel.

(d) That the only preservative permitted to be used in butter and margarin be boric acid or mixtures of boric acid and borax, to be used in proportions not exceeding 0.5 per cent., expressed as boric acid.

(e) That in the case of all dietetic preparations intended for the use of invalids or infants chemical preservatives of all kinds be prohibited.

(f) That the use of copper salts in the so-called "greening" of preserved fruits be prohibited.

(g) That means be provided, either by the establishment of a separate court of reference or by the imposition of more direct obligation on the local government board to exercise supervision over the use of preservatives and coloring matter in foods, and to prepare schedules of such as may be considered inimical to the public health.

The author believed that the injuries produced by most preservatives is to the kidneys, and that a goodly proportion of the diseases of the kidneys may be due to this cause.

Dr. Henry L. E. Johnson, Washington, D. C., in his paper on "National Supervision and Standardization of Food," held that the question of pure food is of equal importance with that of good health and that this factor is being recognized, as is evidenced by the efforts of the hygienists, along the lines of the protection of the individual and national health. He pointed out the dangers of adulterated foods and "patent medicines" and the necessity of collecting, under a system of uniform legislation, all the duties which could possibly be assigned to boards of public health. He urged the importance of national coöperation in establishing a system of food standardization and the improvement and regulation of the conditions surrounding the preparation, production and sale of every form of food.

Sailors' Food.

Mr. William Spooner, M. R. C. S., Liverpool, pointed out that a system of inspection has done much to remove the ills connected with the rations of the sailor, but that there are still many conditions existing which need improvement. The most important fact, in his idea, was that the human organism demanded variety, and that sufficient variety was not provided as a rule. The tendency was toward the excessive use of animal food, which did not conduce to the best health conditions. The speaker believed that fresh vegetables should be placed on every ship sufficient to last for as great a portion of the voyage as possible. He discussed at length the new compulsory food scale developed along proportionate lines.

Preservatives in Food.

Prof. John Glaister, Glasgow, expressed the opinion that the use of preservatives in food is objectionable. The recognized use of certain preservatives, however, is a proof of their usefulness and he, therefore, suggested that there should be a classification of preservatives, into two classes, one of which would contain those which were harmless in operation and effect, and the other those which were harmful. He was inclined to think that a little more consideration might be paid to the effect of cold storage on food, as in many cases, meats chilled before rigor mortis has set in, putrefies very rapidly when taken out of cold storage.

(To be continued.)

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY.

Eleventh Annual Meeting, held at St. Clair, Mich., Aug. 30-Sept. 1, 1906.

(Concluded from page 886.)

Spontaneous Rupture of the Esophagus.

Dr. John O. McReynolds, Dallas, Texas, reported a case of spontaneous rupture of the esophagus, which occurred about four o'clock in the morning, the patient dying from hemorrhage in a few hours. There was no hematemesis at any time. The autopsy showed a rupture three inches long in the lower third of the esophagus, the left pleural cavity, the mediastinal space and stomach being filled with dark grumous blood. Microscopic sections showed that the esophagus was very thin-walled and that the wall had been destroyed by a process of ulceration.

The Use of Paraffin.

Dr. Secord H. Large, Cleveland, Ohio, in a paper on "The Safest Method of Using Paraffin," described the technic of subcutaneous injections in saddle-back noses, in atrophic rhinitis, and in deformities after sinus operations. He detailed the causes of failure, the high and low melting points of paraffin, and outlined the dangers of the use of this substance and how to avoid them.

Spray and Electrocautery Useless.

Dr. Edward J. Bernstein, Kalamazoo, Mich., in a paper entitled "The Comparative Uselessness of the Spray and Electrocautery for the Rhinologist," stated that in his hands he had been using the spray steadily less and less as a means of cleaning the nose, and that he had long felt that it was futile to expect cure of any nasal conditions by the spray. He stated also that he had not used the electrocautery for ten years and could think of only the smallest possible number of conditions in which it might be used in preference to the knife. He believed that much of the harm assigned to rhinology may be traced to the fact that almost every physician's office in the land is supplied with a spray apparatus, with which physicians, without regard to pathologic conditions, attempt to treat nasal affections.

Treatment of Acute Dacryocystitis.

Dr. Lee Masten Francis, Buffalo, N. Y., stated that in most cases of acute dacryocystitis, stricture of the lachrymal duct is the causal factor. The success of the treatment depends on rapid control of pus and dilatation of the stricture. It is important to avoid lacerations which may be followed by stricture. Experiments have shown that antiseptics may be driven into the lachrymal sac by the use of inunctions. Pus formation may be controlled by drainage through the canaliculi, by gentle upward massage, by ice compresses and by inunctions. The author regards the probe as invaluable, but it should not be used until the pus has nearly disappeared and the acute inflammation subsided, and then only with extreme care.

Should the Antrum be Opened in Mastoid Operation?

Dr. George F. Scott, Buffalo, N. Y., remarked that mastoid operations are performed by all sorts of physicians who always look for the antrum. After the ear has become dry, but the cells still remain affected, the antrum will be found dry also. There is no need to open it. With proper care, it is not at all difficult to select those cases which need antrectomy or the modified Schwartze operation.

Evacuation of the Tympanic Cavity.

Dr. Percy Friedenberg, New York City, claimed that aside from the operative management of such grave complications of otitic disease as sinus thrombosis and brain abscess, the most practical advance in the otology of the present day has been in the recognition of the importance of early paracentesis of the tympanum and free drainage in acute otitis, as a preventive of mastoid involvement. Any measure which will aid drainage will be welcomed. For a number of years the author has made it a routine measure to aspirate the middle ear by suction through a sterilized glass tube immediately after paracentitis. By this means a dram or more of bloody or purulent fluid will be brought out, where otherwise a much smaller quantity would be obtained. By this procedure, the incision in the tympanum may be kept from premature closure and a second paracentitis thereby may be avoided. This treatment is free from the dangers of catheterization or Pollitzeration, which increase intra-tympanic pressure and may force septic matter into the mastoid cells. Furthermore, by causing a partial vacuum, it encourages depletion of the mucosa of the middle ear and flushes out the aural cavity.

Oral Tuberculosis.

Dr. Thomas E. Carmody, Denver, described the channels of infection in tuberculosis of the mouth; primary and secondary infection and their relation to laryngeal and nasal lesions, and the influence of age, sex, occupation and personal habits. He then gave in detail the tissues most often affected with difference in lesions, and gave a description of the surgical, medical, curative and palliative treatment.

Is Laryngeal Tuberculosis a Primary Infection?

Dr. Lorenzo B. Lockhard, Denver, averred that the absence of pulmonary disease does not of itself establish the primary nature of tubercular laryngeal disease. Lymphatic involvement, especially of the tonsils and cervical glands had been proved. While the dependence of some laryngeal cases on disease of the tonsils and cervical glands had been demonstrated, a few cases had been recorded, substantiated by autopsies, in which the larynx and lungs have been found normal, and in these cases no reference has been made to the condition of the lymphatic system. There is no inherent peculiarity of the laryngeal mucosa or its secretions which should prevent it from becoming primarily infected, but as yet this occurrence has not been conclusively proved, despite the fact that tuberculosis is the most common of all laryngeal diseases.

Sarcoma of the Nose.

Dr. Robert Levy, Denver, reported a case in which the pathologic findings were verified by indisputable authority. The tumor was completely removed by intranasal operation. Recurrence did not yield to surgical measures. The development was coincident with the appearance of multiple sarcomata of the legs. After the cessation of all treatment, the nasal tumor disappeared completely, and some of the tumors of the legs also disappeared, but not all nor completely. The tumors of the leg returned and continued to grow until the patient died. At no time after the disappearance of the nasal tumor was there a return of the growth in the nose. The author then discussed the question of spontaneous disappearance of malignant growths.

Removal of the Faucial Tonsils.

Dr. Ovidus A. Griffin, Ann Arbor, Mich., stated that unanimity of opinion as regards the advisability of the complete removal of the faucial tonsils does not obtain. He gave the anatomy and physiology of the tonsils, and the indications for their removal, and stated that the extirpation should be as complete as possible. He then described an original scissors, by the use of which separation of the pillars and complete removal of the tonsils could be effected.

Eyestrain and Crime.

Dr. George M. Case, Elmira, N. Y., urged the necessity of the examination of the eyes of inmates of penal institutions and especially of reformatories and schools for incorrigibles. He stated that a large percentage of the young criminals of New York have strikingly high ocular defects. He considered eyestrain as a contributing factor in truancy in school, disinclination to work and inebriety. He believed that routine examination of the eyes of school children would do much toward the prevention of criminal tendencies and would elevate the standard of civilization, and considered that state appropriations should be made for this purpose. The managers and superintendents of institutions should be informed as to the baneful results of eyestrain in the production of crime.

Cataract Extraction.

Dr. Duff W. Greene, Dayton, Ohio, read a paper on "Cataract Extraction Within the Capsule by External Manipulation—the So-called Indian Method." The condition of the capsule often determines the amount of vision secured. Extraction within the capsule by external manipulation eliminates this and avoids secondary operation. Unfortunately, in some cases certain unknowable conditions of the zonula or of the capsule itself may defeat the endeavors to deliver the lens after this method. It is a more difficult operation than either the simple or the combined method. The section must be larger, the iridectomy broader, and the zonular attachments to the capsule must be broken up by direct and continuous pressure. The capsule itself must not be ruptured, as this is essential to the success of the method.

Cataract Extraction with Preliminary Capsulotomy.

Dr. Homer E. Smith, Norwich, N. Y., outlined the essentials of a smooth extraction, the preliminary treatment of the patient, the immediate preparation for operation, the capsulotomy done through the cornea with a knife-needle, the cornea having been dilated some hours before the extraction of the lens. He detailed the advantages of this procedure as compared with capsulotomy done subsequent to the corneal section, and described the extraction and the first dressings.

Nasal Obstruction.

Dr. Arthur E. Prince, Springfield, Ill., in his paper entitled "Some Considerations Relative to Nasal Obstruction," answered the following questions: (1) What is the cause of the prejudice against the removal of tonsils and what would overcome the prejudice? (2) What is the best method of removing hypertrophied turbinates? Is it wise to operate on both at the same time? (3) Is the return of adenoids often observed, and what is the best remedy to prevent their return? (4) What is the status of the profession with regard to the removal of adenoids, tonsils and hypertrophied portions of the turbinates at one operation? He gave a description of his methods and a summary of his results, and detailed the position, technic, anesthetic, instruments and after-treatment.

Travel Notes

(Continued from page 713.)

DISEASE AND HOSPITALS OF THE INTERIOR OF SOUTH AFRICA.

NICHOLAS SENN, M.D.
Professor of Surgery in the University of Chicago and Professor and Head of the Surgical Department of Rush Medical College.
CHICAGO.

The interior mountain plateau of South Africa has a healthful climate, and malaria, if it exist, is limited to circumscribed locations. No place along the East Coast is exempt from this disease, which prevails throughout the year, although it is much more frequent during the rainy season. Professor Koch has made the statement that in German East Africa the disease as a rule reaches its topographic limits at an altitude of 3,000 feet, and from what I have seen this rule applies to most parts of Africa. As soon as we reached this altitude we no longer saw the impress of malarial poisoning stamped on the faces of the people living on the coast, and the number of malarial patients in the hospital diminished with the increase of the altitude, being smallest in Johannesburg, which is situated nearly 6,000 feet above the level of the sea. At Victoria Falls, which has an altitude of less than 3,000 feet, malaria prevails to a considerable extent along the Zambesi River during the summer months, but the disease gradually diminishes in frequency between the river and Bulawayo, which is nearly twice as high above the level of the sea as the Victoria Falls.

Few tropical diseases have their origin either in Cape Colony or in the interior of South Africa, and the diseases encountered here resemble those met in temperate climates. The farther south I traveled from Victoria Falls the more the natives had lost their primitive-type, customs and habits, and in consequence had lost in part their resistance to some of the diseases of the Europeans, notably tuberculosis, carcinoma and appendicitis. In Cape Colony many of the natives, once black as ink, had quite a fair complexion, and the facial type had undergone decided changes toward that of the Europeans in consequence of the long-standing and free admixture of Caucasian blood. I will pass in brief review what I saw in the different hospitals as I traveled southward from Victoria Falls.

BULAWAYO MEMORIAL HOSPITAL.

This name was given to the hospital to commemorate the jubilee of Queen Victoria, and was built and opened its doors for the reception of the sick seven years ago. The hospital is a handsome brick building admirably adapted for the changeable climate of the country. It is built on the pavilion plan and is surrounded by large grounds, embellished by fine walks, trees, shrubs and flowers (see illustration). The main building, a large imposing one-story pavilion, is devoted to offices, resident surgeon's quarters and European patients. The capacity of the hospital is 120 beds, of which about one-half are in the two detached rear pavilions for the natives.

The European part has a number of well-furnished pleasant private rooms, for which the patients pay $1.50 a day. A number of larger rooms contain two and three beds, for which a smaller charge is made. Patients in the large wards pay according to their means. Most of the blacks are charity patients, but for some of these their employers pay a small sum. Henry Curtis, B.S. and M.D. (Lond.), F.R.C.S., is the resident surgeon. He does all the operative work, and his results have been exceptionally good, so much so that the surgical material has increased considerably from year to year during his term of service. He is a fine young man with superior attainments, and has kept pace with modern medical and surgical literature, although he has been isolated from medical centers for a number of years. The patients are nursed by three English Sisters and 13 pupil nurses. I was particularly impressed with the neat and clean conditions of the two wards for natives, and with the care given their patients by the Sisters and nurses. The operating room is small, but fairly well equipped for aseptic work. The institution has a Roentgen apparatus, the first one I saw in Africa, which is in charge of the resident surgeon.

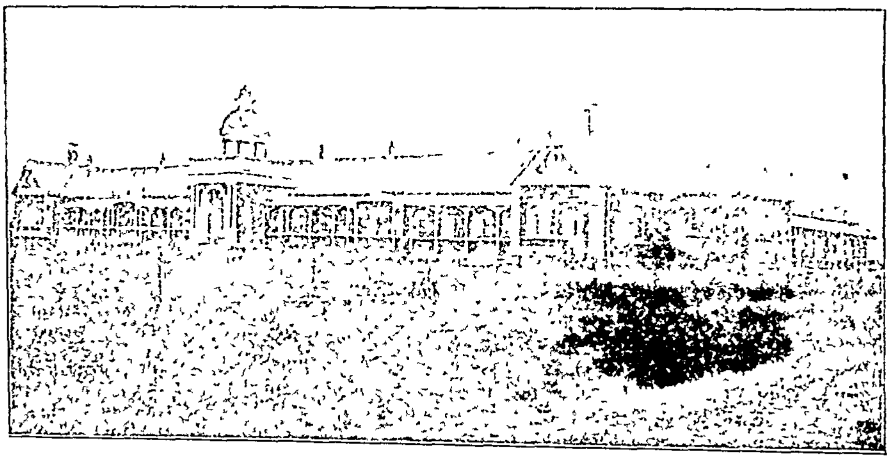
In this hospital I first learned of the effects of civilization on the blacks, in causing a growing susceptibility to some of the diseases to which the savages appear to be almost immune. I refer particularly to carcinoma, appendicitis and tuberculosis of bones, joints and lymphatic glands. I saw none of these diseases in the blacks in the hospitals of the East Coast. Dr. Curtis has collected 12 cases of malignant disease in negroes, and is preparing a report of these for the medical press. In the hospital report for 1905 I find mention of two cases of sarcoma of bone occurring in natives; three cases of tubercular glands, and four cases of tuberculosis of bone, in one of which the disease involved the left humerus and right scapula, in two the vertebræ and in one the pubic bone. One case of appendicitis in the native is reported in which an abscess had formed. The patient was operated on, but died a few days later from pneumonia and cardiac failure. In the cases of glandular tuberculosis the disease implicated the inframaxillary glands in one case, the axillary in another, and in the third the crural glands were affected. During the year referred to, the hospital took care of 1,261 patients—722 whites and 539 blacks—and the average number of in-patients was 54. At the time of my visit not more than half the beds were occupied.

The demand on the hospital space is always heaviest during the rainy season, when the malarial patients, many coming from a distance, form the bulk of the inmates. The salubrity of the high mountain plateau of South Africa has become almost proverbial in that country. During the year, 469 cases of malaria and one of black-water fever were treated in the hospital, but in many of the cases the disease did not originate in Bulawayo or anywhere near it, as many of these patients came from localities where malaria is endemic. It is interesting to know that of the 469 cases of malaria only 128 of the patients were blacks, and that of the 19 cases of black-water fever all were whites with the exception of one, a colored boy from the Cape. Only 17 patients with typhoid fever entered the hospital during the year, and of these, 5 died, all of whom, with one exception, were whites. Of ten cases of pulmonary tuberculosis, six were in whites and four in blacks. Influenza is credited with only three cases, two whites and one negro; acute and subacute rheumatism with 31 cases, 10 whites and 21 blacks; pneumonia with 66 cases, and only two deaths; 17 whites and 49 blacks. Of 35 cases of scorbutus, 33 were blacks, and of these, 5 died; of the two whites, one died. None of the figures in the statistics is large, the diseases enumerated covering almost the entire nomenclature, and the absence of tropical diseases and the small number of acute gastrointestinal diseases is noteworthy, and the best possible evidence that Bulawayo is not a good place for many doctors.

The small number of injuries treated in the hospital also attracts attention. Only five amputations for injuries were performed during the year. Among the fractures enumerated were three of the skull, two of the ribs, four of the clavicle, one of the humerus, one of the radius and five of the tibia and fibula, all compound. Of the 134 operations performed, 48 were on whites and 86 on blacks. The hospital receives an annual government grant of $18,000, which is a material aid in defraying the necessary expenses. Half the cost of free native patients is also borne by the government, which amounted during the year 1905 to over $6,000. The entire expenses of the hospital amounted to about $65,820.

CARNARVON HOSPITAL, KIMBERLEY.

Kimberley is the most famous diamond city of the world, and its population of about 75,000 depends largely on the brilliant gems taken from its five mines. It has only one general hospital, named after a former governor. This was built soon after the discovery of the mines, twenty-five years ago, and has been enlarged since that time to meet the constantly increasing demands. Like all South African hospitals, it is constructed on the cottage plan, the building material of the one-story pavilions being brick and the roof corrugated iron. It can accommodate 200 patients. The two large wards for the blacks are detached from the remaining buildings, as well as the new hospital for white children. Patients who can afford to pay are charged from 25 cents to $7.50 a day, according to accommodations. A large number of plainly furnished, comfortable rooms are the main source of income. The only government support the hospital receives is the hospital head tax of 25 cents a week imposed on all adult male natives. The large grounds, the broad verandas around each pavilion and the grate fires in the wards impart to the hospital an aspect of home comfort. At the time of my visit a biting cold wave from the south swept the treeless plains unmercifully and the open grate fires looked particularly attractive.



Bulawayo Hospital.

Two resident surgeons live on the premises in separate buildings and devote their whole time and attention to the care of the inmates. The senior resident surgeon is permitted to do consulting work outside of the hospital, but the junior's income is limited exclusively to his small salary. Nine English Sisters and 50 nurses and probationers have charge of the nursing. The training school for nurses in connection with the hospital is in a flourishing condition. A three years' course is compulsory. The teaching is done by the Sisters and regular lectures are given by the medical staff. The nurses' home is a new separate modern building. Cleanliness and good order prevailed throughout the institution, and the blacks seemed to be well cared for. All the blacks who die here are subjected to postmortem examination, and the permission of the natives is never asked. In the children's ward I saw a child on whom tracheotomy had recently been performed for diphtheritic laryngitis and the little patient was well on the way to recovery. Intubation is not regarded with favor in this part of Africa, and when surgery has to be resorted to in cases of laryngeal stenosis, tracheotomy is the operation of choice. A laparotomy for pelvic inflammation was in progress in the plain, large, well-lighted operating room at the time of our visit. Operating gowns, masks and gloves are not often, if ever, seen in the operating rooms of the South African hospitals. The surgeons roll their sleeves up to the elbows, cleanse and disinfect their hands, put on aprons and then go to work. Several cases of injury from dynamite explosions and a number of fractures made up the bulk of the surgical material.

COMPOUND HOSPITALS.

By a compound is meant the enclosure of a mine in which the miners, usually Kaffirs, are confined as long as they are in the service of the company, which on an average is six months. No one can enter these compounds without special permission, and the miners are not permitted to leave the premises. Each of the five diamond mines employs from 2,000 to 2,500 blacks. The large square in which they live is surrounded by a wall. The sleeping places, butcher shop, stores and hospital are built all around against the wall, and in the large open space the blacks cook, eat, wash, smoke and play. I saw here a group of blacks who were smoking hemp, passing a large pipe from one to the other. Each of them took a large draught, retained the smoke for some time in the distended mouth, and then allowed it slowly to escape. At least two who were enjoying this vice, showed plain manifestations of intoxication.

Each compound has its own hospital and doctor. The building is constructed of corrugated iron, and has accommodation for about eighty patients. A dispensary and small operating room are to be found in each of these hospitals. The nursing is done by male attendants, but in one of the compounds a trained female nurse of mature age was at the head of the nursing staff, and it was in this hospital that the wards and bedding were cleanest.

The prevailing diseases among the miners are bronchitis, pneumonia and scurvy. Scurvy is very common and, as the physician of one of the compounds assured me, is due to the lack of vegetable food, which is very expensive here, and which the blacks refuse to buy in sufficient quantity on account of the high price, as they are anxious to save all the money they can to enable them to return to their homes as soon as possible. The most common injuries are burns and wounds from dynamite explosions and fractures. Among the interesting cases I saw here was a negro, the subject of multiple large keloids and an albino Kaffir. The man was about 30 years of age, with fair complexion, red curly hair and the characteristic eyes of the albino. I was informed that the average mortality from pneumonia in these compound hospitals is not less than 25 per cent. I saw and examined a number of cases during the acute stage of the disease, and in each of them the viscid rust-colored sputum was present.

It is not so very easy for the blacks to get into one of these compounds, as they have to undergo a thorough physical examination by a physician, but there is more ceremony connected with their getting out. Stealing of diamonds by the miners is an old trick and has cost the companies millions of dollars. All kinds of devices have been invented and practiced by the blacks to enrich themselves by stealing now and then a diamond which they find. To encourage honesty, the company pays each miner 10 per cent. of the value of the stones he finds, provided he delivers them at once to the manager. Notwithstanding this inducement, thefts are by no means rare even now with all possible precautions to guard against them. Some of the compounds are roofed in with wire netting to avoid all possibility of communication between the natives and the outsiders. The shrewd blacks will hide away diamonds in all avenues of their bodies whence they can be removed after they have left the compound. Against this method of pilfering the company now has instituted and enforces a measure well calculated to do away with this practice. When a black miner signifies his intention to leave the compound, he is put in a separate place and under guard, with others who are about to leave, and is subjected to repeated examinations for one week. Both of his hands are confined in stout leather mittens fastened with a lock at the wrists. This muffling of both hands prevents the temporary prisoner from grasping and disposing of any diamonds hidden in any part of his body, or the body of any of his companions. Each man is given a brisk dose of castor oil, the discharges are examined, and if at the end of a week no diamonds are found, he is given his liberty. In one compound I counted twenty blacks, lying side by side in a room, who were under observation prior to their departure. The physical condition of the men who leave the mines, after working on an average for six months, is much better than at the time of their entrance, as I had abundant opportunity to observe.

(To be continued.)

State Boards of Registration

COMING EXAMINATIONS.

OKLAHOMA Board of Medical Examiners, Guthrie, September 25. Secretary, J. W. Baker, Enid.

NEW YORK Boards of Medical Examiners, Albany, September 25-28. Chief of Examining Division. Charles F. Wheelock, Albany.

UTAH State Board of Medical Examiners, Salt Lake City, October 1. Secretary, R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, October 1-2. Secretary, Ancil Martin, Phoenix.

COLORADO State Board of Medical Examiners, Denver, October 2. Secretary, S. D. Van Meter, Denver.

IDAHO State Board of Medical Examiners, Lewiston, October 2. Secretary, J. L. Conant, Jr., Genesee.

MONTANA Board of Medical Examiners, Senate Chamber, The Capitol, Helena, October 2. Secretary, Wm. C. Riddell, Helena.

MINNESOTA State Board of Medical Examiners, Old Capitol Building, St. Paul, October 2-4. Secretary, W. S. Fullerton, St. Paul.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, October 2-4. Secretary, H. M. Wheeler, Grand Forks.

RHODE ISLAND State Board of Health, Room 313, State House, Providence, October 4-5. Secretary, Gardner T. Swarts, Providence.

GEORGIA Board of Medical Examiners (Regular), Capitol, Atlanta, October 9. Secretary, E. R. Anthony, Griffin.

ARKANSAS State Medical Examining Board, Little Rock, October 9. Secretary, J. P. Runyan, Little Rock.

KANSAS State Board of Medical Registration and Examination, State House, Topeka, October 9. Secretary, F. P. Hatfield, Grenola.

MICHIGAN State Board of Registration in Medicine, Lansing, October 9. Secretary, B. D. Harison, Detroit.

MISSISSIPPI State Board of Health, The Capitol, October 9. Secretary, J. F. Hunter, Jackson.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, October 11. Secretary, Geo. C. Ober, Washington.

NEW JERSEY State Board of Medical Examiners, Trenton, October 16-17. Secretary, J. W. Bennett, Long Branch.

TEXAS State Board of Medical Examiners, Houston, October 16-18. Secretary, T. T. Jackson, San Antonia.

FLORIDA Board of Medical Examiners (Regular), Jacksonville, October 17-18. Secretary, J. D. Fernandez, Jacksonville.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, October 17-19. Secretary, J. A. Egan, Springfield.

LOUISIANA State Board of Medical Examiners, New Orleans, October 19-20. Secretary, F. A. Larue, New Orleans.

INDIANA Board of Medical Registration and Examination, Indianapolis, October 23-25. Secretary, W. T. Gott, Indianapolis.

Kentucky July Reports.—Dr. J. N. McCormack, Secretary of the State Board of Health of Kentucky reports the following examinations: At the examination held at Louisville, July, 1906, the number of subjects examined in was 13; total number of questions asked, 120; percentage required to pass, 70, not less than 60 in any one branch. The total number of candidates examined was 17, of whom 11 passed, including 2 osteopaths, and 6 failed, including 3 osteopaths and 1 graduate in optics. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent
Hospital Coll. of Med., Louisville	(1906)	72, 79
University of Louisville	(1906)	76
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll)	(1906)	76
Barnes Med. Coll	(1906)	74
Medical Coll. of Ohio	(1902) 82; (1906)	78
University of Pennsylvania	(1905)	85
University of Tennessee	(1906)	70

FAILED.

Hosp. Coll. of Med., Louisville	(1903)	65
Univ. of Tennessee	(1905)	55

At the meeting held July 16, 1906, the following were granted licenses to practice medicine without examination:

	Year Grad.	Total
Hosp. Coll. of Medicine, Louisville	(1896) 1; (1906)	40, 41
University of Louisville	(1887) 1; (1894)	1, 2
Kentucky School of Med	(1888) 1; (1906)	6, 7
Louisville Med. Coll	(1906)	1

At the meeting held July 22, 1906, the following were granted licenses to practice medicine without examination:

Louisville Med. Coll	(1906)	4
Kentucky School of Med	(1906)	2
University of Louisville	(1899)	1

New Louisiana Officers.—We learn from Dr. Felix A. Larue, secretary of the Louisiana State Board of Medical Examiners, that on and after Oct. 1, 1906, the office of the board will be Room 502, Tulane-Newcomb Building, 211 Camp Street, New Orleans.

New Nebraska Rules.—Dr. George H. Brash, secretary of the Nebraska State Board of Health, sends us the following resolutions which were adopted and approved by that board, Aug. 8, 1906:

Resolved, That after July 1, 1906, no one shall be allowed to practice medicine or osteopathy until a certificate has been issued by the Nebraska State Board of Health.

Resolved, That after July 1, 1906, no one shall be granted a certificate on reciprocity unless the applicant has been in active practice in the state, by whose board he is endorsed, for at least one year immediately preceding such endorsement.

West Virginia July Report.—Dr. H. A. Barbee, Secretary of the West Virgina State Board of Health, reports the oral and written examination held at Charleston, July 10-12, 1906. The number of subjects examined in was 9; total number of questions asked, 120; percentage required to pass, 80. The total number of candidates examined was 79, of whom 52 passed and 27 failed, including 15 non-graduates. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
George Washington University	(1904)	86
American Coll. of Med. and Surg., Chicago	(1906)	82
Drake University	(1905)	82
Louisville Med. Coll.	(1906)	97
Kentucky University	(1906)	82, 86
University of Louisville	(1906)	87
Hospital Coll. of Med.	(1904)	87
Baltimore University	(1905)	80, 80
College of P. & S., Baltimore	(1903) 83; (1906)	81, 84, 85, 85, 89, 89, 92.
University of Maryland	(1906)	88, 93, 94
Maryland Med. Coll.	(1905) 82 (1906)	86
Baltimore Med. Coll.	(1906)	94
Barnes Med. Coll.	(1906)	83
Leonard School of Med.	(1895)	80
Medical Coll. of Ohio	(1905) 82; (1906)	84, 89
Starling Med. Coll.	(1906)	85
Pulte Med. Coll.	(1906)	91
Columbus Med. Coll.*	(1882)	84
Eclectic Med. Inst., Cincinnati	(1906)	81
Jefferson Med. Coll.	(1905) 94; (1906)	84, 88
University of Pennsylvania	(1904) 86; (1906)	90
Meharry Med. Coll.	(1906)	83
Chattanooga Med. Coll.	(1906)	82
Medical College of Virginia	(1902) 91; (1906)	81, 86, 86, 94
University of Virginia	(1898)) 88; (1903) 90; (1906)	87, 88
University Coll. of Med., Richmond, Va.	(1906)	84, 85, 86

FAILED.

	Year Grad.	Number Examn'd.
Kentucky School of Med.	(1905)	2
University of Louisville	(1906)	1
Kentucky University	(1904) 1; (1905)	1; 2
Baltimore University	(1905)	1
Maryland Med. Coll.	(1906)	3
Barnes Med. Coll.	(1905)	1
University of the South	(1904)	1
University Coll. of Med.	(1897)	1

*Merged with Starling Medical College in 1892.

The following questions were asked:

PRACTICE OF MEDICINE (REGULAR AND HOMEOPATHIC).

1. Describe the tongue in typhoid fever; chronic gastric catarrh: billousness and scarlet fever. 2. Cirrhosis of the liver: give symptoms and causes. 3. Give normal dimensions of the liver in midaxillary and mammary line. 4. What is the pulse rate at birth, at five, ten, fifteen and twenty years? 5. What is arteriosclerosis and what are the symptoms? 6. Where is the apex beat of the heart felt? Where are the various murmurs heard? What causes the heart sounds? 7. What is fever? What is the normal temperature? Name a disease in which fever occurs. What is hyperpyrexia? What is a subnormal temperature? How control fever? 8. Vomiting: Describe the cause, mechanism and general therapy. 9. Physical diagnosis: (1) What is vocal frematus? (2) What is vocal resonance? (3) What is a mucous râle? (4) What is a crepitant râle? (5) What is a friction murmur? 10. Give differential diagnosis between smallpox, chicken pox and pustular syphiloderm.

MATERIA MEDICA (HOMEOPATHIC).

1. Give indications for sepia in female trouble. Compare with pulsatilla. 2. In constipation, with no movement of bowels without cathartics or enema, what drugs are called for? Give indications. 3. What remedies are called for in dysentery. Give characteristics. 4. Give indications for rhus tox in typhoid. Compare with similar acting drugs. 5. Differentiate between cuprum-arsen. and merc. corr., in bowel trouble. 6. Mention four polychrests. Give characteristics of each. 7. Mention three remedies having a pathogenesis of green diarrhea and give characteristics. 8. Give indications for three remedies curative in nasal catarrh. 9. Differentiate gelsemium and natrum muriaticum in intermittent fever. 10. Give the therapeutic individuality of sulphur and phosphorus.

MATERIA MEDICA AND THERAPEUTICS (REGULAR).

1. Define materia medica and therapeutics. What is the difference between empirical and rational therapeutics? 2. Name four ways by which medicine may be introduced into the circulation. 3. Give a rule for calculating doses of medicine for children. 4. Name three drugs excreted by the mammary glands and which may affect the nursing infant. 5. From what source is ergot derived, and what is its most important physiologic action?. 6. What is the difference between an abstract and an extract? What are expectorants, diaphoretics, diuretics? How do they act? 7. What is normal saline solution, how administered and in what conditions used? 8. Dose of salol. How disposed of in intestines? How eliminated? Symptoms of overdose. 9. Name one hydragogue cathartic, one intestinal antiseptic, one hypnotic, one antiseptic, give dose of each. 10. What are alkaloids? Name six important ones with dose.

MATERIA MEDICA AND THERAPEUTICS (ECLECTIC).

1. Apocynum: Indications and uses. 2. Apis: Indications and uses. 3. Aralia: Indications and uses. 4. Belladonna: Indications and uses. 5. Cactus: Indications and uses. 6. Passiflora: Indications and uses. 7. Libradol: Indications and mode of application 8. Aconite: Indications and uses. 9. Ipecac: Indications and uses. 10. Echinacia: Indications and uses.

PRACTICE OF MEDICINE AND PATHOLOGY (ECLECTIC).

1. Typhoid fever: Give etiology, symptoms, diagnosis and treatment. 2. Diphtheria: Give etiology, symptoms, diagnosis and treatment. 3. Give the early diagnosis of tuberculosis of the lungs and the treatment. 4. Appendicitis: Give medical treatment. 5. Lobar pneumonia: Diagnosis and treatment. 6. Smallpox: Give briefly the management and treatment. 7. Scarlet fever: State briefly the care and treatment until dismissed. 8. Rubeola: Give symptoms, diagnosis and treatment. 9. Malarial fever: Give etiology, symptoms, diagnosis and treatment. 10. Cholera infantum: Give symptoms, diagnosis and treatment.

PHYSIOLOGY.

1. Give reaction of the following fluids: Blood, milk, gastric juice, pancreatic juice, saliva, urine and perspiration. 2. In what tissues of the body is lime phosphate most found and its absence constitutes what diseases? 3. From what source are starch, glycogen and sugar derived? 4. What disturbances of digestion result from absence of bile? 5. What is the change in the air breathed, before and after inhalation? 6. Define sensitive nerve, motor nerve, mixed nerve. Give example of each. 7. What are the function and distribution of the fifth pair of nerves? 8. What is meant by nutrition? Define proximate principle. Gixe example. 9. Give composition and functions of the blood. 10. What is fat and how and where digested in the alimentary canal?

ANATOMY.

1. Mention the sutures at the vertex of the skull and state what bones they unite. 2. Mention any one muscle which moves the humerus (1) forward, (2) backward, (3) inward. 3. Describe the renal circulation. 4. Name the bones of the head. 5. Name the principal lobes of the brain and fissures dividing them. 6. Minutely describe the relations of the peritoneum to the bladder. 7. Describe the inguinal canal. 8. Locate and briefly describe the gall bladder. 9. Describe the female urethra as to (1) location, (2) dimensions, (3) structure. 10. What is contained in the right hypochondriac region?

CHEMISTRY.

1. Give names and formulæ of five acids used in medicine. 2. What is "rough on rats?" What is the antidote? 3. What is carbolic acid, physical and chemical properties, antidote? 4. What is arsenic, chemical properties, antidotes? How would you detect it in a solution? 5. Give test for formaldehyd in milk. 6. What are the constituents of normal urine? 7. Name all the different tests for albumin. 8. Name all the tests for sugar. Give formula for Fehling's solution. 9. What are carbohydrates? Name four. 10. What is an incompatible? Name three. What is an insoluble? Name three.

HYGIENE.

1. What is the difference between permanent and removable hardness of water? 2. What is the difference between contagion and infection? 3. Define the terms epidemic, pandemic and endemic. Name a disease of each. 4. How much cubic air space should be allowed each person in a sleeping room? Why? 5. What is the difference between antiseptics, disinfectants and deodorants? 6. Name five of the best disinfectants and explain their action and method of use. 7. What conditions of climate would you recommend for tuberculous patients? Does such a location exist in West Virginia? Explain. What is the best method for preventing the spread of tuberculosis from a sanitary standpoint? 8. How would you prevent the spread of the following: Typhoid fever, diphtheria, scarlet fever and measles? 9. Should a person have gas lights, oil lamps, candles or growing plants in a sleeping room? 10. What is ventilation? Explain the difference between natural and artificial.

OBSTETRICS AND GYNECOLOGY.

1. What bones and ligaments form the obstetric pelvis? 2. Name all the female organs of generation. 3. Describe the stages of formation of embryo and its membranes. 4. Describe the fetal circulation. 5. Give the steps of a normal labor in a primipara? Multipara? 6. A patient with babe six weeks old calls you, she is suffering with pain and dragging in lower abdomen, is very tender, temper-

ature 102.5, a profuse discharge from vagina. On examination you find the uterus measuring five inches and lacerated on the left. Patient is a very sick woman, generally, womb soft and boggy. Treat. 7. Describe a case of placenta prævia centralis, give treatment. 8. Define eclampsia, give symptoms and treatment. What is the prognosis of eclampsia as to mother and child? 9. What constitutes the "bag of water?" What is its functions or office? Would you rupture? 10. Tell how to handle a case of abortion at second or third month.

BACTERIOLOGY.

1. How do you classify bacteria? Name three divisions. 2. What are the products of bacteria? 3. Do bacteria develop spontaneously? Does body temperature affect them. 4. How do micrococci grow? 5. Define sterilization. How obtained? 6. What is an antiseptic? The most effective. 7. Which contains the greatest number of bacteria, river water or ground water and why? 8. What methods are used to free drinking water from bacterial danger? 9. What theory has been brought forward to explain the resisting power of the human body against pathogenic invaders? 10. What factors influence the development of various pathogenic bacteria in the body?

SURGERY.

1. Inflammation: Define, name two common varieties. 2. What constitutes an exotosis, a neoplasm? What is a gumma? Cause, most frequent site and treatment. 3. Define, divide and treat hemorrhage. 4. Describe amputation at middle third of leg, naming important structures severed. Complete operation. 5. Aneurism: Define, give varieties and treatment. 6. Otitis: Define, classify, give cause and treatment. 7. Fracture: Define, classify and give symptoms. Describe and treat a Colles' fracture. 9. Dislocation: Define and classify. 10. Reduce a backward dislocation of humerus at shoulder.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Eczema.

In the treatment of eczema of the female genitals the following combination is recommended by von Schlen in the *Amer. Year Book of Med. and Surgery:*

℞.	Ichthyoli	gr. xv	1
	Pulv. amyli		
	Ung. zinci oxidi, āā	ʒiii	12
	Lanolini	ʒvi	24

M. Ft. unguentum. Sig.: Apply locally to the affected parts.

In dry eczema of the scalp, neck and external genitals the following combination is recommended, using coal tar instead of wood tar:

℞.	Picis carbonis (coal tar)	ʒiss	6
	Alcoholis (95 per cent.)	ʒi	4
	Spts. etheris sulphurici	ʒss	2

M. Sig.: Apply locally with a brush.

In the treatment of professional eczema of the hands the following combinations are advised:

℞.	Zinci oxidi	℥ii	60
	Pulv. cretæ		
	Lotio plumbi		
	Olei lini, āā	ʒss	15

M. Ft. mistura. Sig.: Apply locally to the affected parts. Or:

℞.	Zinci oxidi		
	Sulphuris sublim.		
	Cretal prep.		
	Olei lini, āā	℥ss	15
	Aquæ calcis, āā	℥i	30

M. Sig.: Apply locally.

The foregoing combinations are of value in the milder forms of eczema. Previous to going to bed the patient should be instructed to cleanse his hands carefully and nails with soft soap if the eczema be dry, or with weak soapsuds if the eczema is moist, followed by thoroughly drying the hands and applying the ointment, and at the same time rubbing the hands until the ointment is completely absorbed. The hands should then be covered with gutta percha tissue, thin strips being wrapped around each finger. The whole hand should then be covered with wool-like mittens. The following morning the dressing should be removed, the hands cleansed and a small amount of the ointment again rubbed in for the day. After recovery is almost complete there will remain a few patches, which should be touched up with chrysarobin stick made up as follows:

℞.	Chrysarobin	ʒii	8
	Lanolini	℥iss	45
	Ceræ albæ	ʒvi	24

M. Melt and pour into glass tubes and allow to cool. Sig.: Touch the affected areas two or three times a day.

The hands of those patients who are required to handle lime, plaster and cement must be protected during their work. This may be done by instructing the patient to rub his hands, before beginning his work, with tar diluted with castor oil and alcohol, as this combination is not only palliative and curative, but neutralizes the action of the lime.

In some cases the following combination is recommended to stimulate the corneous layer of the skin:

℞.	Zinci oxidi	gr. xv	1
	Lanolini		
	Resorcin, āā	ʒiiss	10
	Cretæ prep	ʒss	2

M. Ft. unguentum. Sig.: Apply locally.

In the treatment of chronic palmar eczema the following combinations are recommended by the *Medical Bulletin:*

℞.	Olei cadini		
	Olei olivæ, āā	℥ii	60

M. Sig.: Apply locally twice a day. And:

℞.	Acidi salicylici	ʒi	4
	Camphoræ		
	Chloralis hydratis, āā	gr. xv	1
	Sulphuris precip	ʒi	4
	Adipis benzoinatis, q. s. ad	℥i	30

M. Ft. unguentum. Sig.: Apply locally after applying the oils as given.

Intestinal Dyspepsia.

Diarrhea and intestinal indigestion, according to Hemmeter in *Pract. Med. Series,* may be due to failure of gastric digestion, abnormal fermentative changes in the stomach, imperfect function of the pancreas, fermentation or putrefaction in the intestine.

The treatment is: 1. Dietetic, avoiding alcohol, tea, coffee and tobacco, and regulating the diet by excluding those articles which pass the intestines undigested or else give them in very small quantities and in a finely divided state. The experience of the patients is often a good guide. 2. In the treatment of constipation present the practitioner should decide whether it is due to spasm or atony, and in many cases this may have to be determined by therapeutic tests.

[In spastic constipation the patient has colicky pains, especially after eating sour foods, and when he has gone to stool there is a feeling of incomplete evacuation, the caliber of the stool is small, ribbon-shaped, as differentiated from the large caliber of the stool in atonic constipation.]

Care should be taken in the last meal of the day, as a heavy supper often produces a restless night. The treatment, according to Hemmeter, of the general neurasthenia should be electrotherapy, hydrotherapy, massage and baths.

Insomnia may be corrected by simply flushing out the colon. Hypnotics should be avoided if possible. As intestinal antiseptics in these cases the author recommends bismuth salicylate, subgallate, betanaphthol bismuth, thymol, menthol, resorcin and salol.

For putrefactive diarrhea with abdominal pain the following combination is recommended:

℞.	Bismuthi subgal.	ʒii	8	
	Salve	gr. xxiv	1	65
	Ext. opii (denarcotized)	gr. iii		20

M. Ft. capsulæ No. xii. Sig.: One capsule before meals.

For the anexoria the following combination:

℞.	Strych. sulph.	gr. 1/3		02
	Acidi hydrochlor. dil	℥ss	15	
	Ext. condurango flu	f℥iss	45	
	Elix. gentianæ	℥vi	180	

M. Sig.: One tablespoonful in two ounces of water one-half hour before meals, taken through a glass tube. Or:

℞.	Tinct. nucis vom	ʒiiss	10
	Tinct. card. co	℥ii	60
	Tinct. gent. co	℥vi	180

M. Sig.: One tablespoonful three times a day before meals in a small amount of water.

Or, according to Boas, the following:

℞.	Ext. nucis vom	gr. vi		40
	Bismuthi subcarb.	ʒiiss	10	

M. Ft. chartulæ No. xx. Sig.: One before each meal.

Menche recommends the following combination:

℞.	Resorcin resublim.	gr. lxxv	5	
	Tincturæ rhei	℥ss	15	
	Elix. simplicis, q. s. ad	℥iii	90	

M. Sig.: One tablespoonful twice a day before meals. Or:

℞.	Resorcin resublim	gr. lxxv	5	
	Bismuthi salicylatis			
	Pulv. rhei			
	Sodii sulphatis, āā	ʒiiss	10	
	Sacch. lactis	ʒiiiss	14	

M. Sig.: One teaspoonful before each meal.

When fermentation is present with anorexia the following formula after Ewald is advised:

℞.	Tinct. nucis vom	ʒvi	24	
	Resorcin sublim	gr. lxxv	5	
	Elix. simplicis	ʒiii	12	

M. Sig.: Ten to fifteen drops every two hours in a small amount of water. Or:

℞.	Ext. condurango flu	fʒv	20	
	Resorcin sublim	ʒi	4	

M. Sig.: Thirty drops four times a day in water.

When anemia is present with the gastrointestinal symptoms the following combination is recommended:

℞.	Quin. sulph	gr. xviii	1	20
	Strych. sulph	gr. 1/3		02
	Ferri sulph	gr. xii		75
	Acidi arsenosi	gr. 1/5		014

M. Ft. pil. No. xii. Sig.: One pill three times a day.

Tongue and Mouth in Typhoid Fever.

In considering the care of the tongue and the mouth in typhoid fever Shoemaker states that some of the gastrointestinal symptoms may be avoided. The mouth should be thoroughly cleansed after each feeding with an antispetic solution similar to the following combination:

℞.	Creosoti (beechwood)	m. xv	1	
	Aq. eucalypti	f℥vi	180	

M. Sig.: To be applied with a swab of absorbent cotton after each feeding.

When the lips become dry as well as the tongue the following application is recommended:

℞.	Acidi citrici	ʒv	20	
	Syrupi limonis	f℥i	30	
	Aquæ q. s. ad	f℥viii	240	

M. To be used as a mouth wash, diluted as necessary.

When the tongue becomes dry and brown the internal administration of turpentine will often be effective, given in the form of the official emulsion of the new Pharmacopeia, or as follows:

℞.	Olei terebinthinæ	ʒiv	15	
	Olei amygdalæ exp	m. lxxv	5	
	Syrupi	ʒvi	24	
	Pulv. acaciæ	℥ss	15	
	Aquæ q. s. ad	℥iiiss	100	

M. Sig.: One to two teaspoonfuls three or four times a day.

If there is any contraindication to its use, such as nausea or some kidney involvement, the author recommends that dilute nitric acid be given in five-minim doses (.30), well diluted in water, three times a day after food.

Medicolegal

Evidence in Action by Physician Against Administrator.

The Supreme Court of Colorado holds, in Temple vs. Magruder, a case where the latter-named party sought to recover against an administrator a judgment on a claim for medical services, that the physician's account book must be deemed a book of original entry, and would have been admissible in evidence had the preliminary proof required by the statute been made. But it holds that it was clearly error to permit the physician to testify in the case, because of the statute providing that "no party to any civil action, suit or proceeding, or person directly interested in the event thereof, shall be allowed to testify therein, of his own motion, or in his own behalf, . . . when any adverse party sues or defends as the . . . executor or administrator . . . of any deceased person . . . unless when called as a witness by such adverse party so suing or defending." By the plain and positive provision of this statute, the physician, the court says, was incompetent to testify in this case of his own motion, and over the objection of the administrator, on any matter, or at all.

Opinions of Unprofessional Observers as to Sanity.

The Supreme Court of Kansas says, in the case of Kempf vs. Koppa, that an unprofessional observer is competent to form a judgment and express an opinion on the sanity or insanity of one he knows. A fundamental qualification is that the witness shall have had adequate opportunities of observation of the conduct, declarations and appearance of the person whose sanity is in question. The weight and force of the testimony will depend on the extent of the opportunity, as well as the power and habits of observation possessed by the witness, and a consideration of all the circumstances under which the opinion was formed. The courts do not undertake to lay down a definite rule as to how closely the witness must have observed the person whose sanity is the subject of inquiry in order to be qualified as a witness, as even a casual observer may discover mental manifestations that would make his testimony valuable. Whether there is a fair basis for an opinion by a witness must be left largely to the trial court, and the jury, taking note of the opportunity and powers of observation of the witness, must then decide what weight and effect shall be given to his opinion.

Nature of State Board of Health and Its Acts—Powers—Revocation of Certificate.

The Supreme Court of Missouri says that in the case of State, on the relation of McAnally vs. Goodier and others, the relator (McAnally) asked for a writ of prohibition to prevent the State Board of Health proceeding in an investigation of charges of alleged improper conduct and revoking a certificate to practice medicine and surgery issued to him in 1883. Under the act of 1883 he was not required to have a certificate from the State Board of Health to entitle him to practice medicine, because he had been practicing for a period more than five years before the law was enacted, and he maintained that the board had no right to revoke the certificate issued to him, even if it should find after investigation that he was morally unworthy to exercise the high calling, because he said that the board had no right to issue it in the first place. But a complaint of that kind does not make a very persuasive appeal for a writ which, after all, is within the sound discretion of the court to issue or refuse independent of strict technicality, as the very right and justice of the case require. The certificate implied not only that the holder is learned in the science, but that he is, from a moral or ethical standpoint, worthy to be trusted. In this case, if the board, on investigation, should find the relator guilty of the charges preferred, the utmost it could do would be to cancel the certificate that it had itself issued, leaving the relator in full possession of what he said the law gave him independent of the board—that is, the right to practice medicine on his own merits; but it would not leave him armed with his certificate of good character from the State Board of Health. The relator had no right to hold that certificate if he was unworthy of the confidence it invited.

The relator complained that the board was going to try him without exercising compulsory process to bring before it the witnesses he needed for his defense. But the State Board of Health is not a court—is not a judicial tribunal. It can issue no writ. It can try no case—render no judgment. It is merely a governmental agency, exercising ministerial functions. It may investigate and satisfy itself from such sources of information as may be attainable as to the truth or falsity of charges of misconduct against one holding one of its certificates, but its investigation does not take on the form or *character of a judicial trial.* The law does not contemplate that the technical rule of evidence applicable to a judicial trial will be strictly followed, or that compulsory attendance of witnesses will be made. It contemplates that a plain, honest, common-sense investigation shall be made, with good faith and as thorough as may be with the light of such evidence on either side as is obtainable without process and with the means at hand, much like the investigation that fair-minded, intelligent men would make in their own business concerning the alleged misconduct of one of their employés, with this difference only, that the board can not revoke the license except for cause and after the accused has had an opportunity to be heard.

The statute says the board may refuse to issue the certificate, or may revoke it after it has been issued, if the man is unworthy. This implies that the board may have some information of misconduct of an applicant which would justify a refusal to issue the certificate, or, after the certificate is issued, that would justify its recall, and in either case the board is authorized to act, "after giving the accused an opportunity to be heard." Those are the only words that suggest a trial, and they fall far short of a judicial trial. To guard and protect the health and welfare of its people the state must have its ministerial agents or officers and intrust them with power. If every administrative act that looks to the enforcement of the law should be required to be reduced to the compass of a lawsuit and be put into effect only after a court had at the end of a formal trial stamped its judgment on it, the government would make slow progress. There must be trust reposed somewhere and the power to execute the law. The General Assembly has taken great care to secure trustworthy men to perform the duties that are devolved on the State Board of Health. The duties of the board are of an administrative or ministerial character, and, therefore, as long as its acts are within the scope of the exercise of a reasonable discretion it is free to act. If perchance, through a misunderstanding of the law, the board should refuse to perform a given duty, the writ of mandamus will right the wrong, but the writ of prohibition does not go against such a body. It goes only against a court or a tribunal exercising judicial functions.

In other words, the court holds in this case that the state board of health is not a judicial body; that it has the power to revoke a license or certificate issued by it if, after investigation, in which the licensee is afforded an opportunity to be heard, it is satisfied that he has been guilty of unprofessional or dishonorable conduct; and that, in conducting such investigation (or "trial," if that term is preferred), it is not assuming to exercise a judicial function. Therefore a writ of prohibition does not lie to prevent the investigation.

Damages Recoverable for Wrongful Death of Physician.

The commissioner, whose report is affirmed by the United States District Court, in Pennsylvania, in the case of Ward vs. Dampskibsselskabet Kjoebenhavn, an action to recover damages for the wrongful death of a physician, says that no cases were called to his attention, and his search had not disclosed any, in which the amount of compensation for the death of a physician under similar circumstances was determined. The physician in question, Dr. John M. B. Ward, was at the time of his death 39 years of age. He had been a physician for twelve years. For the last eight years he had been an assistant quarantine physician, selected for his competency. Prior to his appointment as assistant quarantine physician, he had been elected to a position on a hospital staff, devoting his time to bacteriology. At the time of his death he was in receipt of an annual salary of $2,000 and the use of a house and other perquisites estimated of the value of $1,000 more per year. His personal expenses were estimated at $1.000 a year, leaving $2,000 as the yearly sum that his widow and children were deprived of by his death. Under these circumstances the commissioner thinks an award of $25,000 damages proper; and the court concurs therein.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

1 *Mysteries and Sources of Suicide. G. M. Gould, Philadelphia.
2 Shock. L. Waite, Chicago.
3 *Pleurisy with Effusion and Pulmonary Tuberculosis. H. F. Stoll, Hartford, Conn.
4 *Acute Mastoiditis, Its Prevention, Diagnosis and Treatment. J. J. Thomson, New York.
5 *Hay Fever and Persistent Bronchial Asthma Relieved by Treatment Directed to the Antrum of Highmore. J. E. Schadle, St. Paul, Minn.
6 *Possible Danger in the Therapeutic Use of Osmic Acid. A. E. Hertzler, Kansas City, Mo.

1. **Mysteries and Sources of Suicide.**—Gould calls attention to the important part which he believes eyestrain plays in suicide. He thinks that the most convincing and striking proof of the theory of this influence in producing suicide pertains to the time of life at which the numbers of suicides increase, reach their acme and decline. Presbyopia with its doubling and trebling of eyestrain, according to Gould, occasions the increased disease and suicide at the ages of from 40 to 60 years. Gould cites specific instances of victims of eyestrain.

3. **Pleurisy and Pulmonary Tuberculosis.**—Stoll concludes that all effusions within the pleural cavity are to be considered grave, as a large majority of them are of tuberculous origin. Although a positive history is most important, a negative one is valueless in excluding tuberculosis. In the absence of a pneumonia or a septic condition he considers the very presence of a pleural exudate sufficient to raise the question of tuberculosis. Patients with pleuritis should be told that the affection is probably due to the tubercle bacillus. They should be assured that they will get well, but they should be warned to take especial care of their health for a number of years.

4. **Acute Mastoiditis.**—Thomson says that the best preventive treatment of this condition is to keep the patient in bed for several days. A good cathartic is indicated. As soon as there is any bulging, an early and free incision should be made in the membrana tympani.

5. **Hay Fever and Persistent Bronchial Asthma.**—Schadle reports the case of a patient who had been suffering for almost two years with hay fever and asthma. Both antral cavities were irrigated with a warm boric acid solution until the return fluid was clear and free from sediment. The sinuses were then freely insufflated with thymol iodid. This treatment was continued for five days. On the third day the symptoms disappeared. The environment was not changed, nor was any treatment given other than that mentioned.

6. **Danger in Use of Osmic Acid.**—Hartzler states that when a dilute solution of osmic acid is injected into the free peritoneal cavity, particles are carried to the kidney, as in the case of silver chlorid, with the small accompanying hemorrhages. Although the small amount of osmic acid used in the treatment of neuralgia is probably not great enough to jeopardize life, still there is a limit to the amount of the chemical which can be used safely in therapeutics.

New York Medical Journal.

September 8.

7 *Cholelithiasis. C. Beck, New York.
8 Case of Sacroteratoma. S. Leobold and L. B. Phillips, Inwood. N. Y.
9 *Deep Breathing as a Therapeutic and Preventive Measure in Certain Diseases of the Lungs. J. H. Pryor, Buffalo.
10 Diagnosis of Gastric Ulcer. H. Weinstein, New York.
11 *Cure of Tuberculosis of the Joints. E. A. Tracy, Boston.
12 Relation of the Physician to Sanitation and Hygiene. H. P. Sights, Paducah, Ky.
13 Résumé of Recent Work in Clinical Pathology of the Urine. T. W. Hastings, New York.
14 X-Ray in Splenic Enlargements. C. Eastmond, Brooklyn.

7. **Cholelithiasis.**—In his discussion of the clinical history of cholelithiasis, Beck lays particular stress on the diagnosis of this condition by means of the Roentgen ray, which has proven very satisfactory in his experience, and describes his method of operation.

9. Deep Breathing.—Pryor makes an earnest plea for deep breathing as a therapeutic measure of the first magnitude in the treatment of malnutrition characterized by that complex group of symptoms ascribed to neurasthenia, toxemia, indigestion, anemia, gout, and in affections of the lungs and pleura. He says that deformities due to rickets and spinal curvatures are often susceptible of great improvement by combined exercise of the lung and special gymnastics. In delayed consolidation, incomplete resolution, imperfect restoration of function accompanying or following pneumonia; partial consolidation, collapse or carnification of the lung, associated with or resulting from pleurisy with effusion; bronchiectasis and adhesions of the pleura, deep breathing is particularly beneficial. Breathing exercises must be taught and watched to be effective. The lungs should be filled from bottom to top. The object to be attained is increase of the tidal and supplemental, and a decrease of the residual air. If coughing is produced by deep breathing, it is usually beneficial and assists in distending unused lung tissue, stretching or tearing adhesions and dislodging secretion.

11. Tuberculosis of Joints.—Tracy pleads for the employment of correct principles in the treatment of tuberculosis of joints consisting of the fixation of the joint, protection of the joint from weight bearing, and good constitutional treatment. He reports 16 cases.

Boston Medical and Surgical Journal.

September 6.

15 Chemistry of the Bacterial Cell and a Study of the Effects of Some of the Split Products on Animals. (To be continued.) V. C. Vaughan, Ann Arbor, Mich.
16 Child and the Public School Curriculum. T. F. Harrington, Lowell, Mass.
17 Observation Hospitals or Wards for Early Cases of Mental Disturbance. L. V. Briggs, Boston.
18 *Appendicostomy and Cecostomy for the Relief of Chronic Diarrhea. S. G. Gant, New York.

18. Appendicostomy and Cecostomy in Chronic Diarrhea.—Gant gives his personal experience in the treatment of 9 cases of persistent ulcerative colitis and chronic diarrhea by means of appendicostomy or cecostomy. In 8 of these cases the appendix was brought up, attached to the skin and opened in order to permit through-and-through irrigation. In the remaining cases the cecum was opened and a catheter introduced, after the method of Gibson, for the same purpose. Gant's experience with these operations has been most gratifying. He says that the operation of appendicostomy is comparatively simple, can be performed quickly and is no more dangerous than is the interval operation for appendicitis. Gant opens the abdomen by a short intermuscular or gridiron incision such as is made for appendectomy. He says further:

> The appendix is located, freed if adherent, brought outside the abdomen, opened and a probe inserted to make sure of its patency. If found to be too short, strictured or otherwise unsuitable, it should be removed and a cecostomy substituted. If, however, the appendix is sufficiently long and patent, it is ligated and cauterized. The cecum at its base is sutured to the abdominal wall and the parietal peritoneum, muscles and skin closed with plain catgut sutures. The appendix is anchored to the skin by one or two sutures and the wound covered with protective tissue and gauze held in place by adhesive plaster. In some cases the meso-appendix is left intact, while in others the artery is ligated and the peritoneum stripped off, but apparently neither method has any advantage over the other. Usually the part of the appendix external to the ligature sloughs about the fourth or fifth day, leaving the open stump projecting about one-fourth of an inch above the skin.
>
> The irrigations are begun immediately, using saline solution, ice water, or solutions of boracic acid, potassium permanganate, carbolic acid, ichthyol, bichlorid of mercury, or nitrate of silver. In practically all cases the abdominal discomfort and frequent evacuations cease immediately after the operation, or after the first irrigation, and within a few days the stools become almost normal, containing but little blood or mucus. It appears to make but very little difference what irrigating fluid is employed, provided that it is used daily and in sufficient quantity to cleanse the bowel thoroughly.

The only unpleasant sequela in Gant's series of cases was a small ventral hernia.

Lancet-Clinic, Cincinnati, Ohio.

September 8.

19 Albuminuria. J. H. J. Upham, Columbus.

St. Louis Medical Review.

September 1.

20 Hemoptysis as a Sequela of Epileptic Convulsions. W. Spratling, Sonyea.
21 Origin and Heredity of Matter. (To be continued.) J. Wright, New York.

Surgery, Gynecology and Obstetrics, Chicago.

August.

22 *Pulsating Exophthalmos. J. Ransohoff, Cincinnati.
23 Medico-Military Notes in Manchuria. J. V. Hoff, U. S. Army.
24 Practical Bacteriologic Studies in the Surgical Clinic. W. G. Macdonald, Albany, N. Y.
25 *Use of Thyroid Extract to Shorten Coagulation-Time of the Blood. W. J. Taylor, Philadelphia.
26 Case of Traumatic Hemorrhage into the Left Lateral Lobe of the Cerebellum; Operation; Recovery. H. A. Ballance, London, England.
27 Acute Intussusception in Young Children. E. Eliot, Jr., New York.
28 *Cancer of the Sigmoid and Rectum. C. H. Mayo, Rochester, Minn.
29 *President's Address Before the American Surgical Association. A. Vander Veer, Albany, N. Y.
30 *Treatment of Congenital Dislocation of the Hip by Incision. E. H. Bradford, Boston.
31 *Open Treatment of Fractures. E. Martin, Philadelphia.
32 Experiences in the Operation of Thyroidectomy, Partial and Complete. F. J. Shepherd, London, England.
33 *Surgery of the Large Intestine. G. E. Armstrong, Montreal, Canada.
34 *Surgery of Carcinoma of the Upper Portion of the Rectum and the Sigmoid Colon. J. C. Bloodgood, Baltimore.
35 History of Our Knowledge of Aspiration Drainage in Empyema and Other Surgical Conditions. J. D. Bryant, New York.
36 *Hyperplastic Tuberculosis of the Intestines. G. B. G. De Nancrede and E. E. Butterfield, Detroit.
37 *Cancer of the Colon. W. Meyer, New York.
38 *Surgery of Tuberculosis of the Colon. L. L. McArthur, Chicago.
39 *Serum-Therapy of Tetanus. C. A. Porter, Boston.
40 *A New Method of Utilization of the Sac in the Radical Cure of Hernia. R. Park, Buffalo, N. Y.
41 *Satisfactory Vesical Evacuator. H. A. Kelly, Baltimore.
42 *Technic in Caring for the Umbilical Cord and Navel. T. M. Burns, Denver.

22, 36, 39.—See THE JOURNAL, July 14, 1906, page 147.

25, 29, 30, 31, 40.—See THE JOURNAL, July 7, 1906, pages 66 and 67.

28, 33, 34, 37, 38.—See THE JOURNAL, June 30, 1906, page 2016.

41. Vesical Evacuator.—For several years past Kelly has made use of an evacuator in order to empty the bladder of the last drop of urine when the patient is in the knee-chest position, which is in all respects satisfactory. The evacuator is made up of a tube 18 cm. long in its straight portion and 8 cm. long beyond the bend. It consists simply of a bent tube 3.5 mm. in diameter, through which the urine is drawn by a suction bulb into a suitable glass receptacle. The inside diameter of the tube is a little over 2 mm. in diameter. A cap which screws on the end of the tube is used to push down into the vertex of the bladder as the suction is applied, when there is a free and rapid flow from the vesical vertex into the glass bottle held below the level of the bladder. A little flange near the outer end serves to give the fingers a firm hold.

The value of this simple little instrument is said to be twofold; in the first place, it serves to remove any urine which has not been passed or removed by catheter before putting the patient in the knee-chest position. A few drams of water lying in the vesical vertex may easily prove a source of much annoyance to the examiner—above all, if the patient is not in a good posture. Furthermore, if the operator desires to collect urine from one kidney by means of the ureteral catheter, while at the same time he is collecting the urine from the opposite kidney transvesically by means of a vesical catheter, under these circumstances it is most important to empty the bladder thoroughly just before catheterizing the ureter, in order that the urine which runs into the bladder and then out through the vesical catheter may really represent the kidney not catheterized. Such a method of examining the uncatheterized kidney is always valuable as a means of determining the urea coefficient. It may be valuable, too, for a microscopic and a bacteriologic examination, provided the bladder itself is sound.

42. Caring for Umbilical Cord and Navel.—Burns' method differs from those in general use: 1, In the use of a ligature close to the skin covering of the cord; 2, in the arrangement of the gauze; 3, in the absence of any antiseptic powder; and 4, in the use of cotton between the abdominal band and the genitals. Five minutes after the child is born the cord at the juncture of the skin and amniotic coverings is tied with a silk ligature (No. 10 or 12 twisted silk, or a doubled piece of

knitting silk). The ligature is drawn very tightly, so as to compress the deeply situated blood vessels. Two inches from the navel the cord is clamped with a pair of hemostatic forceps (Pean's five-inch long bite). The cord is held away from the child's genitals by the hemostatic forceps and cut one and a half inches from the navel with an angular pair of scissors. The placental end of the cord is carried by means of the hemostatic forceps to the Kelly pad. Wharton's jelly is squeezed out of the cord by grasping the cord near the navel with the fingers of one hand and stripping with the fingers of the other hand. The cord is tightly ligated one inch from the navel, then the ends of the ligature are carried around the cord to the side opposite the knot and tightly tied.

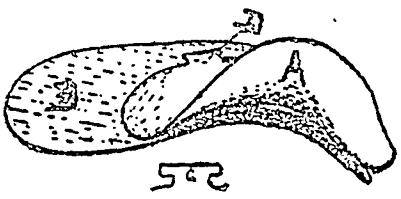
After the child is washed, the cord and navel region are bathed with a saturated solution of boric acid and wiped perfectly dry. A strip of sterilized gauze of four layers is cut to the size of 7 by 3½ inches. In one-half of this, at about the center of the junction of the lower with the middle third, a hole is cut and the cord passed through it and laid upward on the gauze. The other half of the gauze is folded over the cord. A piece of absorbent cotton is placed above the gauze and the band applied. Between the band and the genitals a piece of cotton is placed to prevent the urine from soiling the dressing. The method has been used with the very best results in the last 100 cases attended by the author, and no harmful effects have been noticed.

Albany Medical Annals.

September.

43 Subacute and Chronic Vesiculitis. J. W. Wiltse, Albany.
44 *A Brace to Aid in the Treatment of Flat or Weakened Feet. J. M. Berry, Troy, N. Y.
45 Professional Circumspection. E. Oliver, Ancram, N. Y.
46 Modern Scientific Medicine and Its Relation to Union University. J. D. Craig, Albany.

44. **Brace for Flat or Weakened Feet.**—The brace employed by Berry consists of two parts, a supporting portion (A) and a base piece (B). (C) represents the tongue portion of the support, which fits into the slot in the base piece marked (D).



The supporting portion is made of No. 16, 18 or 20 (depending on the weight of the patient) tempered galvanized steel fitted over a plaster-of-Paris model of the arch of the foot. It supports the arch of the foot and projects high up on the inner side of the foot so that when worn with a properly constructed lace shoe it exerts firm lateral pressure on the foot, thus preventing lateral deformity. It does not cover any of the weight-bearing portion of the heel or ball of the foot and is attached to the base piece in such a manner that it is movable in every direction, thus allowing all motions of the foot to take place. In other words, it supports and holds in position the arch of the foot with the smallest amount of splinting. The base piece serves simply to hold the supporting portion in place. It is made of flexible spring brass so that it readily conforms to the shape of the bottom of the shoe, and when it slips into place in the heel of the shoe the arch supporter is in its correct position.

The method of taking the plaster cast for the brace in question is as follows: The patient sits with the knee flexed and resting on a support in such a way that the outer surface of the foot rests against an upright support. The foot presses closely but not too firmly against the upright support, thus leaving a space between the foot and the support corresponding to the arch of the foot. The support is tilted somewhat to allow the position to be assumed by the patient more comfortably. The arch of the foot is first coated with vaselin to prevent the plaster adhering and with a dermatographic pencil the outline of the brace is drawn on the foot, special care being used in marking out the anterior and posterior limits and the height to which the brace rises laterally. The foot is now put in position on the support and the space represented by the arch of the foot filled with plaster cream. The plaster hardens in a few moments, and on removal the outline made with the dermatographic pencil will be found to have been transferred to the plaster. Any imperfection in this negative cast can be filled with plaster cream, and after this has hardened, the surface is coated with vaselin, the outline of the brace freshened and a positive cast made, especially necessary in all cases where the arch is very low or where edema or swelling has partially obliterated the arch. The cast is now sent to the instrument makers and the steel plate fitted to the outline.

International Journal of Surgery, New York.

September.

47 Retrodeviations of the Uterus. A. J. Walscheid, Union Hill, N. J.
48 *Prolapsus Ovari in Femoral Ring, Simulating a Strangulated Femoral Hernia. T. W. Parsche, Chicago.
49 Logic of Abdominal Pain. J. L. Wiggins, East St. Louis, Ill.
50 Case Illustrating the Association of Pelvic Disease with Appendicitis. R. S. Joyce, Ogden, Utah.
51 Preliminary Tracheotomy in Operations About the Tongue and Pharynx. B. G. Copeland, Birmingham, Ala.
52 Appendicitis—Hypospadias—Cervical Adenitis—Cystic Ovary. G. E. Woolsey, New York.
53 Appendicitis. R. T. Morris, New York.
54 *A New Splint for Fractures of the Humerus. G. G. Marshall, Wallingford, Vt.

48. **Prolapsus Ovari in Femoral Ring.**—Parsche reports case of femoral hernia of the ovary occurring in a woman who had a tumor in the femoral region for 14 years, causing her no distress until she over-exercised and the hernia of the ovary became strangulated.

54. **New Splint for Fractures of Humerus.**—Marshall's splint consists of two thin pieces of board fastened to each other at right angles by their long edges. One, longer than the other, is 15 inches long by 3¼ inches wide; the other is 11 inches long by 3 inches wide. In the angle at the lower end is fitted a square piece of material with a slot cut through it near its outer end. Surmounting the upper end of the shorter side of the splint, is fastened a crutch piece to fit the axilla. This piece is also curved forward so that the end will not crowd on to the chest, as the arm rests across the body. When the splint is in position the crutch piece fits closely in the axilla, and the longer side supports the posterior aspect of the arm, while the shorter one supports the inside of the arm. The square at the lower end of the splint extends from 2 to 4 inches below the elbow, according to the length of the arm. Strips of adhesive plaster are applied, one to the inside and one to the outside of the arm, extending up to the point of fracture. At the elbow the strips are folded on themselves so as to cover their adhesive surfaces, and the inner one passed through a slit in the lower end of the piece; the outer strip is passed through a similar slit in the square piece, the two ends drawn tightly and tied. This gives strong extension in the line of the shaft of the humerus. This splint is of special advantage in compound fractures of the humerus as the dressings may be removed without weakening the extension.

Texas State Journal of Medicine, Fort Worth.

September.

55 Management and Treatment of Pulmonary Tuberculosis at a Climatic Resort. B. Cornick, San Angelo.
56 Etiology and Treatment of Movable Kidney. F. W. Kirkham, Cuero.
57 Malarial Keratitis. F. D. Boyd, Ft. Worth.
58 *Drains and Drainage. C. E. Cantrell, Greenville.
59 When Ovarian Cystomata Should be Removed Without Puncturing or Opening. F. D. Thompson, Ft. Worth.
60 Early Treatment of Pneumonia. C. A. Gray, Bonham.
61 Creosote in Tuberculosis. J. C. Carleton, Boston.

58. **Drains and Drainage.**—To dilute the waste matter coming from the rapid changes that ordinarily follow a surgical operation, Cantrell fills a water-bag with normal salt solution and hangs it eight to ten inches above the patient, adjusts the long vaginal nozzle, that has numerous openings, into it so that as the water passes in at some, gas that may want to escape may pass out at others. This is inserted into the rectum and held in place with strips of adhesive plaster passed around the nozzle and then made fast to the patient, the

water is turned on slowly. Cantrell says that it is surprising the quantity that may be taken up in this manner with little or no discomfort, thus facilitating drainage through the natural channels, as well as supplying the necessary fluids otherwise needed.

Journal of Experimental Medicine, New York.

August.

62 *Study of Epidermal Fibrils. R. L. Thompson, St. Louis.
63 *Influence Exerted on the Virulence of Carcinoma in Mice by Subjecting the Tumor Materials to Incubation Previous to Inoculation. G. H. A. Clowes and F. W. Baeslack, Buffalo.
64 *Studies on Calcareous Degeneration. O. Klotz, Montreal.
65 *Pathogenesis of Experimental Colitis and Relation of Colitis in Animals and Man. S. Flexner and J. E. Sweet, New York.
66 Solution of Tissue with Abscess. E. L. Opie, New York.
67 *Simple Method for Plating of Anaërobic Organisms. H. Zinsser, New York.
68 Influence of Colloids on the Diffusion of Hemolysins. S. Flexner and H. Noguchi, New York.

62. **Epidermal Fibrils.**—Thompson found that in certain animals, in addition to the protoplasmic fibrils of the stratum filamentosum that are present normally in human epidermis, there are well-developed fibrils in the cells of the stratum germinativum. These fibrils are present in the human epidermis only under conditions of increased cell activity. These fibrils, that are prominent in the stratum germinativum of human epidermis under conditions of increased cell activity, seem to increase in direct ratio to rapidity of cell production. The differentiation of these fibrils of the stratum germinativum into the finer fibrils which connect the cells of the stratum filamentosum can be observed under proper conditions of growth and therefore there should be no separation of the fibrils into different groups with various names. This process of fiber production by the cells of the human epidermis is analogous to increased fiber production by various other cells under similar conditions, and may be of importance in identifying or classifying new growths of epithelial origin.

63. **Effect of Incubation on Tumor Cells.**—The experience of Clowes and Baeslack with mouse tumors has demonstrated that a great difference exists not only in the relative immunity possessed by different individuals, but also in the relative virulence of different tumors all owing their origin to the same source. The variations in question can be accentuated by incubation of the transplantation materials previous to inoculation at temperatures varying from 37 to 41 C. In the case of extremely virulent tumors giving a yield of over 60 per cent. under normal conditions, a distinct and gradual fall in virulence accompanies increasing temperatures of incubation until a point is reached at which no further tumors are obtained. On the other hand, relatively inactive materials giving comparatively small yields of tumors under normal conditions may be so stimulated by subjecting them to incubation at suitable temperatures as to afford a large yield and relatively more rapidly growing tumors than were obtained in the normal series. Those tumors which give a small yield under normal conditions, but which give an increased yield on incubation, are either rapidly growing young tumors, or small and hard tumors, or tumors that have been extremely slow in their development, and have in certain cases exhibited indications of a tendency to undergo spontaneous recovery. Those tumors which on inoculation give a large yield at normal temperatures and a gradually decreasing percentage of tumors in the batches inoculated with materials which have been incubated at increasing temperatures are generally fully grown tumors which have developed rapidly and come of a relatively active strain.

64. **Calcareous Degeneration.**—The methods employed by Klotz resemble those of previous investigators. A pure solution of adrenalin chlorid, 1 to 1,000, was injected into the ear veins of rabbits. Microscopic lesions, such as dilatation of the blood vessels, hemorrhages in the brain and aneurismal distensions of the larger vessels, were noted. The most frequent lesions were situated in the descending arch of the aorta, where white calcified plaques formed the chief naked-eye alterations. The aneurisms were found to be situated in the centers of these white plaques which have been described by some as atheromatous areas. Histologic examination shows that these plaques, at an early stage, are situated entirely in the media and that the calcification which occurs here is the secondary result of a degenerative, chiefly fatty, change which takes place in the media. Calcification is never found in the intima, and only rarely are there any intimal changes. The intimal changes which occur are of two kinds; either there is a local heaping up of endothelial cells at a point where no degenerative changes of any kind have taken place, or there is a thickening of the intima underneath the endothelial cells, chiefly due to proliferation of the connective tissues, in which slight fatty changes may occur. Such being the case, Klotz believes that the term atheroma must be discarded in describing the experimental arterial lesions in rabbits.

65. **Colitis in Man and Animals.**—Flexner and Sweet state that the toxin of the Shiga dynasty bacillus is liberated from the bacillus through the process of autolysis. In rabbits the toxin is not absorbed directly in an active form by the gastrointestinal tract; in man, however, absorption of an active poison does take place from the intestine. The toxin is excreted in rabbits, and probably in man as well by the intestine, chiefly probably by the large intestine, which being injured by the act of elimination, reacts by the development of inflammation, etc. In rabbits the characteristic action of the toxin depends on the integrity of the biliary secretion into the intestine. When the bile is prevented from entering the intestine, either by ligature and section of the duct or by establishment of a biliary fistula, no lesions whatever of the large intestine appear, or they are inconsiderable in extent. The loss of toxin through a biliary fistula does not prevent in rabbits the lethal effects which are caused, apparently, by a nervous poison. The tying off of the bile duct seems to prevent the passage of the toxin in amounts sufficient to cause the large intestinal lesions into the blood. The liver, therefore, in this condition tends to hold back the toxin from the general circulation. The peculiar effects of the toxin on the large intestine in rabbits is not produced at once, but would appear to depend on successive acts of excretion of the poison by the bowel. The establishment of biliary fistula reduces the intensity of action of corrosive sublimate on the large intestine in rabbits; and the lesions of ricin poisoning in these animals are also modified by this operation. Dysentery toxin is destroyed by peptic digestion, and also, though probably more slowly, by tryptic digestion. The absence of power of the toxin to cause poisoning in rabbits when it is brought directly into the lumen of the intestine, is not explained by the destructive action of trypsin. The character of the histologic changes in the cecum of rabbits caused by the dysentery toxin, points to an action on the substance and not primarily on the surface of the intestine.

67. **Method for Plating Anaërobes.**—The method described by Zinsser, besides being a facile one for separation, permits the assumption of absolute anaërobiosis. The apparatus used consists of two circular glass dishes fitting one into the other as do the halves of a Petri dish, and similar to these in every respect, except that they are higher, and that a slightly greater space is left between their sides when they are placed together. The dishes should be about three-fourths to one inch in height, they need be of no particular diameter, although those about the same size as the usual Petri dishes are most convenient. The sole requirement necessary for successful plating is that the trough left between the two plates when put together shall not be too broad, a quarter of an inch being most favorable. Into the smaller of these plates the inoculated agar is poured exactly as is done into a Petri dish in the ordinary anaërobic work. Prolonged boiling of the agar before plating is not essential. When the agar film has become sufficiently hard on the bottom of the smaller dish, the entire apparatus is inverted. The smaller dish is now lifted out of the larger and placed, still inverted, over a moist surface—a towel or the wet surface of the table—to prevent contamination. Into the bottom of the larger dish, which now stands open, there is placed a quantity (1 to 2 drams) of dry pyrogallic acid. Into this, over the pyrogallic acid, the smaller dish, still inverted, is then placed. A strong solution of sodium hydrate is poured into the space left between the sides

of the two dishes, in quantity sufficient to fill the receiving one half full. While this is gradually dissolving the pyrogallic acid (and this is the only step which requires speed) albolin, or any other oil, is dropped from a pipette, previously filled and placed in readiness, into the same space, thus completely sealing the chamber formed by the two dishes. If these steps have been performed successfully the pyrogallic solution will at this time appear of a light brown color and the small plate with its agar film will float unsteadily above the other. Very rapidly, as the pyrogallic acid absorbs the free oxygen in the chamber, this plate is drawn down close to the other, and the acid assumes a darker hue, which remains without further deepening even after three or four days' incubation.

Archives of Ophthalmology, New Rochelle, N. Y.

July.

69 Epithelial Formation in the Iris. E. L. Oatman, Brooklyn, N. Y.
70 Case of Melanosarcoma of the Choroid and Orbit. E. L. Oatman, Brooklyn.
71 Traumatic Lacteration of the Inferior Rectus Muscle. H. Moulton, Ft. Smith, Ark.
72 Case of Orbital Endothelioma. J. M. Cooper, Detroit, Mich.
73 Glioma of the Retina. S. C. Ayres, Cincinnati.
74 Pigmentation of the Retina After Optico-Ciliary Neurectomy in Man. T. F. Studer.
75 Posterior Sclerotomy as a Preliminary to Iridectomy in Acute Glaucoma. A. Knapp, New York.
76 Two Cases of Osteoma of the Orbit Successfully Treated by Operation. A. Knapp, New York.
77 Eye Infection, Three Hundred Cases with Bacteriologic Examination. D. Smith, Bridgeport, Conn.
78 Rare Case of Thrombosis of the Cavernous Sinus Following Orbital Thrombophlebitis. F. Stocker, Lucerne.

The Philippine Journal of Science, Manila. Supplement II.

June 15.

79 New Philippine Ferns. E. B. Copeland, Manila.

The Philippine Journal of Science, Manila.

July.

80 Rinderpest. P. G. Woolley, Manila.
81 Preliminary Geologic Reconnaissance of the Loboo Mountains. Batangas Province. W. D. Smith, Manila.
82 Vegetation of the Lamao Forest Reserve, II. H. N. Whitford, Manila.
83. Catalogue of Philippine Hymenoptera, with Descriptions of New Species. R. E. Brown, Manila.
84 Notes on Birds Collected in Mindoro and in Small Adjacent Islands. R. C. McGregor, Manila.

California State Journal of Medicine, San Francisco.

July.

85 Indications for and a Description of the Mastoid Operation. H. Hastings, Los Angeles.
86 Medical Licensure. S. D. Van Meter, Denver.
87 Recognition of Affections of the Upper Air Passages in School Children. E. Mayer, New York.
88 Etiology of Embolism. W. H. Flint, Santa Barbara.
89 Diet and Hydrotherapy in the Treatment of Rheumatism and Gouty Conditions. R. Crees, Paso Robles.
90 *Proprietary Medicines. G. H. Simmons, Chicago.

90.—See The Journal, May 5, 1906, page 1333.

Woman's Medical Journal, Toledo, Ohio.

August.

91 Dysmenorrhea in Young Girls. J. Ghrist, Ames, Iowa.
92 Timidity. M. K. Isham, Cincinnati.

Ophthalmic Record, Chicago.

August.

93 Observations on Methods of Advancement. J. E. Cogan, Cleveland, Ohio.
94 Critical Review of the American Railway Association's Rules Governing the Visual Qualifications of Employés. N. M. Black, Milwaukee.
95 Concerning the Signs in the Retina of Persistent High Arterial Tension and Their Diagnostic and Prognostic Import. G. E. de Schweinitz, Philadelphia.
96 Silver Preparations in Conjunctival Disease. M. Standish, Boston.

Texas Medical News, Austin.

August.

97 Importance of the Recognition and Treatment of Adenoids. D. T. Atkinson, Hillsboro.
98 Prenatal Influence and Postnatal Suggestions. C. E. Belcher, Munson Station, Pa.

Vermont Medical Monthly, Burlington.

August 15.

99 Medical Curriculum. H. C. Tinkham, Burlington.
100 Diagnosis of Chronic Interstitial Nephritis. S. W. Hammond, Rutland.
101 Recent Phases in Connection with the Vermont Observation Law for Insane Criminals. W. D. Berry, Burlington.
102 Preventive Medicine. H. L. Manchester, Pawlet.
103 Broncho-Pneumonia in Children. L. A. Newcomb, Montpelier.

Fort Wayne Medical Journal-Magazine.

August.

104 Forceps. L. P. Drayer, Ft. Wayne.
105 Food Values and Their Practical Application. A. P. Buchman, Ft. Wayne.

The Medical Fortnightly, St. Louis.

August 25.

106 Case of Camphor Poisoning. O. M. Rhodes, Bloomington, Ill.
107 Huacos (Mummy-grave) Potteries of Old Peru (A Study in Pre-Columbian Pathology). A. S. Ashmead, New York.
108 Female Prostate—Anatomico-Surgical. C. E. Barnett, Ft. Wayne.

Pennsylvania Medical Journal, Athens.

August.

109 Philadelphia County Medical Society—Its Problems of the Future. J. M. Anders, Philadelphia.
110 *Focal Diagnosis of Operable Tumors of Cerebrum. C. K. Mills, Philadelphia.
111 *Remarks on the Surgical Aspects of Operable Tumors of the Cerebrum. C. H. Frazier, Philadelphia.
112 *An Instrument Affording a Quick and Safe Method of Entering the Skull with the Minimum Destruction of Bone and Always Preserving a Vital Bone Flap. H. C. Masland, Philadelphia.
113 *Avulsion of the Terminal Branches of the Trigeminal Nerve for the Cure of Trifacial Neuralgia. E. LaPlace, Philadelphia.
114 *Conservative Treatment of the Enlarged Prostate. H. M. Christian, Philadelphia.
115 Case of Cesarean Section. J. H. Devor, Ft. Loudon, D. F. Unger and G. M. Brubaker, Mercersburg.

110, 111, 113.—See The Journal, Oct. 4, 1905, page 1188.
112.—See The Journal, March 4, 1905, page 713.
114.—See The Journal, Oct. 28, 1905, page 1351.

Illinois Medical Journal, Springfield.

August.

116 Some of the Problems of the Internist which Concern the Surgeon. J. F. Percy, Galesburg.
117 *Significance of Hydrochloric Acid Variation in the Stomach Contents. E. J. Brown, Decatur.
118 Flatfoot and Symptomatic Arches. F. B. Lucas, Peoria.
119 Rights and Duties of Municipalities in Regard to Infectious Diseases. G. W. Webster, Chicago.
120 Obstetric Asepsis and Antisepsis. J. B. De Lee, Chicago.
121 Action of Antiseptics on the Parasite. A. Gehrmann, Chicago.
122 Fifty Bacteriologic Tests of Hands, Brushes, Gloves, Pasteur-Filtered Water, Steam and Formaldehyd Sterilizers, and Formaldehyd Disinfection of Rooms. A. Goldspohn, Chicago.
123 *Attitude of the Physician Toward the Nostrum Evil. C. S. Williamson, Chicago.

117, 123.—See The Journal, June 9, 1906, page 1787.

Annals of Gynecology and Pediatry, Boston, Mass.

August.

124 Medical Inspection and Examination of School Children in New York. S. J. Baker, New York.

Southern Medicine and Surgery, Chattanooga, Tenn.

August.

125 Arteriosclerosis; Its Relation to Disease of the Nervous System and to Disorder of Function. (To be continued.) J. Collins New York.
126 Technic of Abdominal Closures. E. Malone, Memphis, Tenn.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

August 25.

1 *Circulation Viewed from the Periphery. J. Barr.
2 *Technic of Operations on the Central Nervous System. V. Horsley.
3 *Teaching of Obstetrics. W. S. A. Griffith.

1, 2, 3.—See abstracts in The Journal, Sept. 1, 1906, p. 706.

The Lancet, London.

August 25.

4 *Observations on the Effect of Sterile Caseous Matter in the Treatment of Tuberculous Disease. P. Paterson.
5 *Anti-cholera Serum. A. McFadyen.
6 Hematogenous Albuminuria. R. H. Fox.
7 Two Cases of Multiple Infection. G. C. Chatterjee.
8 Correction of Death-rates. T. F. Pearse.
9 Induction of Hypnosis. E. Ash.

4. **Sterile Caseous Matter in Treatment of Tuberculosis.**—Paterson directs attention to a few observations which he has made on the effect produced on tuberculous lesions by the injection of some of the products of the tubercle bacillus as elaborated in the body. He says that it is well known that tubercle bacilli are found in the walls of tuberculous abscesses, but in the contents they may be so few that inoculation experiments may be necessary to demonstrate their presence. The conditions in the interior of such abscesses are apparently

favorable to growth; the serum and soluble toxins pass into the circulation, producing more or less constitutional disturbance, whilst there is a stream of fresh serum, rich in nutritive substances, into the interior; the temperature is most suitable, and still not only do the bacilli not increase, but actually diminish in numbers. There must, then, be some substance in the contents which is inimical to the bacilli and, as the fluids are being constantly renewed, presumably this deleterious material is in the encapsulated solids.

The conditions which exist in an abscess, as regards the relative proportion of caseous matter, can not be produced in the body as a whole, still the possibility remains that the introduction of small quantities might exert a beneficial influence on the disease. But before such injections can be made it is necessary to destroy the living bacilli present, for though these may be so few as to escape notice with the microscope, inoculations show that even in these cases they are present. As it was requisite that the chemical constitution of the solids should be as little charged as possible it was evident that neither heat nor chemicals could be used for the purpose of sterilization, and extreme cold, even though applied continuously for a long time, does not affect the virulence of organisms. Cold applied intermittently was found to produce the desired result. If tuberculous pus be kept in a refrigerator but five or six months, but allowing it to thaw frequently during that time, the pus will not induce tuberculosis when injected into guinea-pigs, even in large doses. Having destroyed the bacilli by this means the serum is poured off and the sediment is then washed for three days in a continuous stream of cold sterilized water to remove all soluble toxins. Sterile normal salt solution is now added to the fine white sediment till each centimeter of the emulsion contains 5 milligrams of solid substance and the material is then ready for use.

Large numbers of animals have been injected with this suspension by Paterson, and in no instance has tuberculosis been produced. If a large quantity be injected into a tuberculous patient there is a well-marked reaction, but a few minims can be given without any evident disturbance. If the opsonic index is to be regarded as the degree of resistance of the body against any particular organism then we have in this substance a means of raising the tuberculous index to a high level and that without any negative phase. In one of Paterson's patients this index rose from 0.5 to normal limits within twelve hours. Such a rapid rise is unusual, but there is no difficulty in raising the index to what is regarded as normal and in maintaining it at that level. The technic necessary to obtain this index is so elaborate that it can only be conducted in a fully equipped laboratory and by a properly trained observer, and so long as it remains in this position it can only be employed in a limited number of cases. In using caseous matter, Paterson has found the temperature a convenient guide to the dose. If sufficient be introduced to raise the temperature from 0.5 degree to 1 degree, the best results are obtained and at the same time the index keeps within normal limits. If there be no rise of temperature the index may still be high and yet little, if any, improvement be observed in the disease. He has found that from 0.1 to 0.5 cubic centimeter of emulsion given every second day is sufficient to raise both index and temperature. Paterson begins with the smaller quantity and increases the amount at each injection till a slight reaction appears.

5. **Anticholera Serum.**—MacFayden conducted experiments which show: 1. That acutely toxic cell juices possessing active immunizing properties can be obtained from the cholera organism by the method employed. 2. That an antibody can be produced for that primary poison which exists as an integral constituent of the cholera bacillus—a matter on which there has been considerable dispute and difference of opinion. 3. That the antiendotoxic power of the serum can be raised to a marked degree—a matter of equal importance. 4. That the serum in addition to its antiendotoxic possessed agglutinative and bacteriolytic properties. 5. That in the case of the cholera organism there exists an intimate relationship between its virulence and toxicity. 6. That the cholera endotoxin obtained under the conditions described is thermolabile, being readily destroyed at 55 and 60 C.

Journal of Tropical Medicine, London.

August 15.

10 Beriberi—A Restatement and Reply to Some Criticisms. H. Wright.
11 Malignant Anthrax Edema in Central America. A. Y. Massey.

The Liverpool Medico-Chirurgical Journal, London.

July.

12 Diminishing Birth-rate. H. R. Jones.
13 Effect of Small Doses of Potassium Iodid. W. Carter.
14 Polycythemia Vera (Vaquez's Osler's Disease); A Description of a New Clinical Entity. With a note of a Method of Estimating the Viscosity of the Blood. J. H. Watson.
15 Irregular Pulse; Its Value in Prognosis. J. Hay.
16 Stokes-Adams Disease. J. Hay.
17 Modern Treatment of Syphilis. D. Smart.
18 Complications of Pneumonia and Their Treatment. N. Raw.
19 Acute Nephritis—Morbus Brightii; With Special Reference to Treatment. A. G. Gullan.
20 Possible Danger in Exploratory Puncture of the Chest. H. Armstrong.
21 Significance of the Opsonic Power of the Blood, and the Value of Estimations of the Opsonic Index in the Diagnosis of Tubercular and Other Infections. T. R. Bradshaw and E. E. Glynn.
22 Opsonic Power of the Blood. G. A. Grace-Calvert.
23 Case of Acute Hemorrhagic Pancreatitis. F. W. B. Young.
24 Some Cases of Chronic Rigidity of the Spine. W. B. Warrington.
25 Further Note on Appendicitis. F. T. Paul.
26 Case of Appendicitis with Complications. K. W. Monsarrat.
27 Three Cases of Intra-Peritoneal Rupture of the Bladder. R. W. Murray.
28 Internal Derangement of the Knee Joint; Differential Diagnosis and Treatment. T. Thomas.
29 Tropical Abscess of the Liver. G. P. Newbolt.
30 Posterior Vertebral Tuberculosis. K. W. Monsarrat.
31 Case in which the Spinal Cord of a Rabbit was Used to Bridge over a Gap in the Musculo-Spiral Nerve. D. D. Crawford.
32 Position of the Operative Treatment of Fibroid Tumors of the Body of the Uterus. T. B. Grimsdale.
33 Puerperal Eclampsia. J. Blair.
34 Preliminary Note on a New Theory of Female Genital Activity. W. B. Bell.
35 Three Interesting Cases of Papillomatous Tumor. F. T. Paul.
36 Examination of the Blood by Means of Cut Sections. R. M. J. Buchanan.
37 Aspects of Pruritus. F. H. Barendt.
38 Scabies: Some Points in Diagnosis, Infection and Treatment. F. H. Barendt.
39 X-Ray Treatment of the Ringworm of the Scalp. S. Taylor and W. C. Oram.
40 Subjective Symptoms in Eye-Diseases. R. J. Hamilton.
41 Influence of X-Rays on the Nitrogenous Metabolism and on the Blood in Myelogenous Leukemia. O. T. Williams.
42 Treatment by Hypnotic Suggestion. A. B. Taplin.

Annales de l'Institut Pasteur, Paris.

Last indexed XLVI, page 1651.

43 (XX, No. 4.) Trypanosomiase des chevaux de l'Annam (horses). J. J. Vassal. Id. Comparison avec le surra. A. Laveran and F. Mesnil.
44 *Des endotoxines solubles typhique, pesteuse et dysentérique. Besredka.
45 Sur une spirillose d'un chéiroptère (bat). C. Nicolle and C. Comte.
46 (No. 5.) *Le sérum antidysentérique. L. Vaillard and C. Dopter.
47 *Origine intestinale de la tuberculose pulmonaire et mécanisme de l'infection tuberculeuse. A. Calmette and C. Guérin.
48 .Etudes epidémiologiques et prophylactiques du paludisme. IV campagne en Algérie, 1905. (Commenced in No. 4.) E. and E. Sergent.
49 *La lèpre expérimentale chez les singes inférieurs (monkeys). C. Nicolle (Tunis).
50 Bacillus putrificus. Bienstock.
51 (No. 6.) Transmission de la péripneumonie des bovidés aux espèces ovine et caprine (pleuropneumonia in sheep and goats). E. Dujardin-Beaumetz.
52 Sur les relations des sensibilisatrices avec l'alexine. J. Bordet and F. P. Gay.
53 De l'action du streptocoque et de sa lysine introduits par voie buccale et de quelques questions qui s'y rattachent. A. Tchitchkine.
54 (No. 7.) *Traitement des trypanosomiases par les couleurs de benzidine. (Commenced in No. 6.) F. Mesnil and M. Nicolle.
55 Injection des couleurs de benzidine aux animaux normaux. G. Bouffard.
56 To Gather and Preserve Flies, Mosquitoes, etc.—Récolte et conservation des diptères. E. L. Bouvier.
57 Culture du trypanosome de la grenouille (of the frog). G. Bouet.
58 Recherches sur la toxine et l'antitoxine cholériques. Brau and Denier.
59 Nouvelles recherches sur la spirillose des poules (of fowls). Levaditi and Manouelian.
60 *Un sérum toxique pour les nerfs périphériques. A. Schmidt (Moscow).

44. **Soluble Endotoxins.**—Besredka states that an endotoxin can be obtained from bacilli by triturating a dry mixture of the bacilli and sea salt and then adding water. These endotoxins are more strongly toxic than any other toxin yet described, but they can be neutralized by corresponding serums

robes. The obtained by intravenous injection of living miceivs invariable temperature at which they are destroyed by heat ipy. for chemi- and characteristic, like the boiling or melting point) cal substances.

sly llard and

46. Great Efficacy of Antidysentery Serum.—Vaimpleinst the Dopter state that the serum of horses immunized age stepitoxic bacillus of dysentery possesses antimicrobian and anill properties which render it useful in therapeutics. This serum is entirely harmless for man, but is proving to be almost specific in the treatment of bacillary dysentery. It has no effect on any other variety. They claim that *it arrests both the infection and the intoxication and insures rapid recovery, putting an end at once to all the intestinal disturbances.* Its effects are more striking the earlier it is used, although it has proved effectual even as late as the sixteenth day. Prolonged and chronic dysentery is also amenable to this serum treatment. These results were practically constant in 96 cases of severe dysentery treated with the serum alone, the number of stools ranging from 15 to 288 a day. The amount injected *ranged from 20 to 100 c.c.,* and the injection was sometimes repeated after twenty-four hours, and again a third time in the most threatening cases. The Shiga-Kruse bacillus had been used to immunize the horses, but the serum proved equally effectual against this and against the Flexner bacillus. The curative action of the serum is so prompt and certain that its prophylactic use seems hardly necessary.

47. Frequency of Tuberculous Infection by Way of Digestive Tract.—Calmette and Guérin supplement their previous publications on experimental tuberculosis with the present article, which relates research with cows. The results show that adult cows, as well as calves, contract tuberculosis by the intestinal route, without any traces to be *found in the walls* of the intestinal tract revealing the passage of the tubercle bacilli through them. *In younger animals* the bacilli are retained more or less completely in the mesenteric glands. They *may* die off in the glands or may entail the formation of tubercles. In adult animals the defensive reaction on the part of the glands is much less pronounced, and the bacilli are generally swept along, *with the leucocytes which have incorporated them, into the lymph circulation and through the pulmonary artery to the lung. Pulmonary* tuberculosis in the adult, supposedly primary, is more often of intestinal origin. In experimental work, infection by way of the digestive tract is the most effectual and the one that conforms best to the normal conditions of natural infection.

49. Transmission of Leprosy to Monkeys.—Monkeys of a low type have been found by Nicolle to be susceptible to leprosy in about the same degree as they are susceptible to syphilis. The findings with anthropoid apes may prove more instructive.

54. Treatment of Trypanosomiasis by the Benzidin Dyes.—Nicolle and Mesnil have been experimenting with other dyes of the benzidin group to which trypan red belongs, and give the details of their research, both in regard to the chemical and the biologic action of the dyes in trypanosomiasis. They found that the dye known as "dichlorobenzidine-acid H" (Bayer) is the most powerful in its curative action and is effectual in the three forms of trypanosomiasis in animals, in nagana, mal de caderas and surra. It has, besides, a very striking preventive action in respect to surra. Their tests were made mostly on mice.

60. Prepared Serum Toxic for the Peripheral Nerves.—Schmidt made an emulsion of sciatic nerves from hogs and *injected it into the peritoneum in guinea-pigs.* The serum of the guinea-pigs acquired in time a destructive property for the peripheral nerves of frogs. The nerves suffered both in their physiologic functions and in their structure.

Annales d. Mal. d. Org. Gén.-Urin., Paris.

Last indexed, XLVI, page 1652.

61 (XXIV, No. 6.) Cystoscope combiné pour irrigation, évacuation et cathétérisme de l'un on des deux uretères. A. V. Freudenberg.
62 Synorchidie artificielle après section du cordon pour grosses hernies on ectopies très élevées. Mauclaire.
63 Prostatectomie totale par la voie sus-pubienne. A. Papadopoulos.
64 (No. 7.) Salt Starvation.—Les régimes déchlorurés. (Mal de Bright, chlorurémie et azotémie). F. Widal.
65 De la mesure de la capacité du bassinet (of small pelvis). G. Luys.
66 Anatomie pathologique des cancers épit aux de la *prostate.* Motz and Majewski.
67 Procédé opératoire de l'amputation partielle du pénis, à lambeaux latéraux égaux caverno-cutanés. Kalliontzis (Athens).
68 (No. 8.) Décapsulation rénale et néphrectomie dans le traitement des formes graves de l'éclampsie. Pousson and Chambrelent (Bordeaux). See The Journal, page 308, and also in vol. xlvi, page 1567.
69 Traitement de l'épididymite blennorrhagique par l'épididymotomie. Bazet (San Francisco). See The Journal for April 28, 1906, page 1319.
70 Traitement chirurgical des néphrites chroniques. Address at Lisbon International Medical Congress. A. Pousson.
71 (No. 9.) **Traitement de la blennorrhagie chronique par les instillations de nitrate d'argent suivies de l'introduction d'un cathéter en zinc.* F. Balzer and A. Tansard.
llade la lithiase rénale. P. Héresco.
ture.
72 Sur Diag assage vibratoire de la prostate. Nicolich.
73 Le m Phil.) Masturbation symptomatique (épilepsie larvée).
74 (No. the C. Fére C. ule urétrale à triple courant. F. Zacco (Turin).
75 Nouvelle ca Affoi pho-toxique des pays chauds (tropical). R.
76 Funiculite ly with ana).
Ménocal (Hav a Vater in a Case of Nephritis.—L'eau de mer
77 Injections of Sea oniques sous-cutanées dans un cas d' en injections iso al Robert-Simon. edème brightique.
78 (No. 11.) **Etude des* ruptures traumatiques de la vessie (of bladder). L. Morel.
79 Les méfaits des artifices the de la fécondation (mishaps with artificial aids to fecundati on). C. Féré.
80 Du rôle de la ponction lombaire dans le traitement de l'urémie nerveuse. G. Carrière (Lille). cers

71. Silver Nitrate and Zinc in Chronic Gonorrhea.—Balz and Tansard report 13 cases treated with nitrate of silver and zinc, the action of the zinc decomposing the silver nitrate. There is thus a production of silver albuminate and of silver chlorid which are deposited on the mucosa lining the urethra. There is, further, a formation of metallic silver, also of traces of zinc chlorid, and, finally, of zinc nitrate, which is the most effectual factor of all in the treatment. To obtain this combined local action they instil 10 to 20 drops of a 1 per cent. solution of nitrate of silver. Immediately afterward they insert a catheter made of metallic zinc, about 32 or 40 in the Béniqué series. The zinc catheter is held in the urethra for a minute or two, until the chemical reaction becomes evident by the pain experienced and by the black discoloration of the vaselin with which the catheter is lubricated. In two minutes this black stain shows that the silver-zinc reaction has occurred, and the catheter is then withdrawn. The catheter should be boiled beforehand in distilled water and cleaned at once after removal. They rub it with potassium iodid until it has resumed its usual color. It loses its polish soon and has to be sent to be repolished occasionally. The efficacy of this combined treatment is established by the cases reported. They affirm seven applications cured the first patient, 9 the second and third, 5 the fourth, and so on, all cases of rebellious chronic gonorrhea in males. The method is probably equally applicable for girls and women, in vaginitis and metritis.

78. Traumatic Ruptures of the Bladder.—Morel reports 3 cases which show the diagnostic importance of finding always the same quantity of urine in the ruptured bladder, *as all the urine* above the point of rupture flows out into the peritoneal cavity. The almost immediate refilling of the bladder is also important. The urine accumulated outside flows back into the bladder as soon as it is emptied. One patient had general paralysis, and this allowed his bladder to become distended *to* the bursting point. The degeneration of the bladder musculature also favored abnormal distension.

Archiv f. Gynäkologie, Berlin.

Last indexed page 76.

81 (LXXIX, No. 1.) *Die Sectio cæsarea an der Klinik Schauta. J. Neumann.
82 Ueber Melanosarcoma ovarii. Gleichzeitig ein Beitrag zur Physiologie des Pigments. H. Bab.
83 *Studien zum klinischen und pathologisch-anatomischen Verhalten der Lymph-Drüsen bei malignen Erkrankungen, hauptsächlich dem Carcinoma colli uteri (behavior of lymph glands with cancer). F. Fromme.
84 (No. 2.) *Ueber die primären Resultate und die Dauererfolge der modernen Myom-Operationen (results immediate and remote). O. Sarwey.
85 *Ueber die Tuberculose der Vulva. Logothetopoulos.
86 *Influence of Disinfection of Vagina on Puerperal Morbidity.—Einfluss der Scheidendesinfection auf die Morbidität des Wochenbettes. K. Baisch.
87 Zur Frage der Cysten der Corpora lutea des Ovariums. W. Grouzdew.

88 *Zur Gravidität und Hämatometra des atretischen Nebenhorns (closed accessory horn). R. Freund.
89 Fall von Gonokokkämie bei einem Säugling mit Blennorrhoe (in infant). Hocheisen.
90 *Kidney Functioning in Congested Kidney of Albuminuria in Pregnancy and in Eclampsia.—Nierenfunction bei Schwangerschaftsniere und Eklampsie. O. Büttner.
91 *Die Nucleo Proteide in der Behandlung septischer Krankheitsformen. E. Pollak (Vienna).

81. **Schauta's Experience with Cesarean Section.**—Neumann discusses from various points of view the 175 Cesarean sections performed in Schauta's clinic, with five others done immediately after death. He remarks that this is the largest series of operations yet published from one clinic. He tabulates the various details, showing that 161 of the women recovered including 52 febrile cases, in 140 cases there was no reaction on the part of the wound, while there were stitch hole abscesses in 10 and in the abdominal wall in 8. In 25 cases postoperative bronchitis was observed, with lobular pneumonic foci in 4 and croupous pneumonia in 1. About half of these pulmonary cases occurred during the winter. In one case a latent tuberculous affection of the lungs made itself manifest in the bronchitis after the operation. These respiratory affections occurred about equally with the various anesthetics employed. The importance of these affections is shown by the fact that these cases were all accompanied by fever except in 5 out of the 45. Coughing also has an unfavorable influence on the healing of the wound, being probably responsible for 9 out of the 18 cases in which the wound did not heal by primary intention. In the 14 fatal cases the wound had healed by primary intention in several and death was due to eclampsia in 3 and to other causes in the 6 for which the operation was in no way responsible. In 8 cases the operation may possibly be incriminated, one death being due to asphyxia under chloroform one on the fifth day to pneumonia. The anesthetic in this last case had been Schleich's mixture. Death in another case was the result of axial torsion of the intestine from adhesions consecutive to the Cesarean section. In another case it was the result of hemorrhage from the stump after a Porro operation. Hemorrhage from the stump in a second case was due to pre-existing infection. In the three other cases death was due to infection of the wound, and they emphasize anew the extreme caution necessary in selecting cases for Cesarean section also the necessity for avoiding internal examination of women for whom Cesarean section is contemplated, and, last but not least absolutely certain asepsis on the part of the operating surgeon. Of the 175 children, 164 were living twenty four hours after the intervention, 7 were born dead and 3 died in asphyxia. In 18 cases Cesarean section had been done before in 13 instances at the same clinic. Adhesions were found in all these cases, so large and strong in 2 cases that it was hard to open up the peritoneal cavity. The adhesions were at about the same points as in Haven and Young's material. They show that the ultimate outcome even with modern technic is still far from perfect. The best results were obtained with a sagittal incision, made as high as possible.

83 **Lymph Glands in Carcinoma of the Cervix.**—Fromme is assistant physician in charge of the gynecologic clinic at Halle, and here discusses certain questions connected with cancer of the cervix, among them the cause of the sudden febrile attacks with chills sometimes observed in the course of cancer. He reviews the literature on the subject of the behavior of the lymph glands, and then describes in detail 31 cases from his own experience presenting atypical features. Among other points learned is that the occasional appearance of fever with carcinoma of the cervix must be the result of infection of some of the lymph glands with very virulent micro organisms, which overcome the resistance offered by the glands and pass on into the blood. When the glands are already affected, even slightly virulent micro organisms are able to overcome their resistance. The micro organisms come from the cancer, or enter through some mechanical or chemical injury of its surface. In consequence of the bacterial invasion of the glands a growth of granulation tissue and of connective tissue is stimulated. This may be the work of the cancer toxins alone or associated with living bacteria, or it may follow invasion of the gland by the cancer. This new formation of connective tissue aids in the defense as if the gland is not already cancerous, it opposes greater resistance to invasion by the cancer later, and if the gland is already cancerous, the malignant growth may become encapsulated by connective tissue and be choked out. The gland then seems to be full of a white, greasy mass.

84. **Results of Operative Treatment of Myoma.**—Sarwey analyzes the results of 430 operations for myoma at Döderlein's clinic at Tübingen. Comparing them with others' statistics he finds the total mortality of myoma operations to be 4 or 5 per cent; those done by the vaginal route show 1 or 2 per cent higher mortality and the conservative operations 1 per cent higher mortality than the radical operations. He comments on the great frequency of complications of myoma and declares that they are a strong argument for operative treatment. The ultimate outcome, he says, in cases treated by removal of both ovaries in connection with the radical operation are the best conceivable. Disturbances connected with the artificial menopause were noticed in only a third of the patients, and were always so slight and transient as not to interfere with the working capacity. Danger of trouble in the ovaries later is thus summarily done away with. Conservative operations have several drawbacks, among them the possibility of recurrence and of rupture of the uterus at the point of enucleation. Youthfulness and the express wish of the patient to retain menstruation and the possibility of conception are the only indications, he thinks, for conservative procedures. He advocates not to waste time on symptomatic treatment if it does not soon prove effectual, but to operate promptly after fully instructing the patient in the matter.

85 **Tuberculosis of the Vulva.**—The lesion was removed in the case described on the assumption that it was a cancer, but it proved to be a patch of ulcerated miliary tuberculosis, apparently primary. The patient was a woman of 75, and she succumbed five days afterward to general weakness. An old tuberculous focus was found in the right apex and the glands of the hilus were calcified. The findings in this case throw doubt on some of the published cases of supposed primary genital tuberculosis.

86 **Influence of Disinfection of Vagina on Puerperal Morbidity.**—Baisch remarks that the use of rubber gloves and bacteriologic examination have placed the study of this question on a surer foundation. His article is based on 1,000 spontaneous births in which the parturient was usually repeatedly examined, as many as thirty times in one case. In half of the patients the vagina was washed out with a solution of sublimate. The febrile cases among the irrigated numbered 64, that is, 12.8 per cent., while the unirrigated had only 40 febrile cases, that is, only 8 per cent. Comparing only those in which an internal examination was made, 12.8 per cent. of 500 irrigated and 7.7 per cent. of 373 unirrigated, proved to be febrile cases. Excluding the extragenital sources for the fever, the percentages were respectively 10 for the irrigated and 5.2 per cent. for the unirrigated. Bacteriologic examination before and after showed that the rinsing with a solution of corrosive sublimate was not able to destroy the various germs, especially streptococci and gonococci. It modified the bacteriologic content to the extent that the harmless bacilli were destroyed or overwhelmed by the streptococci which then proliferated unchecked. Streptococcus endometritis was observed in 5 cases among the unirrigated and in 14 cases among the irrigated. The sublimate disinfection has now been abandoned. At present every second parturient is treated by the Zweifel method of wiping out all the blood from the vagina a few hours after birth. The findings to date indicate that autoinfection is not responsible for puerperal fever. The latter seems to be always due to the penetration of pathogenic germs into the uterus. The experience at the clinic has been that 7.6 per cent. of all spontaneous deliveries are followed by fever. The aim should be to prevent access of pathogenic germs to the uterus. The access of germs is favored by anything—such as sublimate irrigation—which reduces the physiologic protecting powers of the vagina. Döderlein's success with lactic acid indicates, however, that the prospect of destroying the pathogenic germs in the vagina is not absolutely hopeless.

88 **Fetation in a Closed Accessory Horn of the Uterus.**—Two cases are described and illustrated and the literature reviewed. Among the points brought out is the fact that de-

fectively developed genital organs are peculiarly liable to infection, especially from the intestines; also that if there is any mucosa at all, menstruation is liable to occur, and in a closed organ the menstrual blood may be absorbed.

90. **Kidney Functioning in Congested Kidney of Pregnancy and in Eclampsia.**—Büttner states that the urine in the congested kidney of pregnancy, during normal delivery and during the convulsions of eclampsia, exhibits the characteristics of insufficiency on the part of the kidneys, evidently due to defective blood supply. This in turn, he is convinced, is the result of spasmodic contraction of the blood vessels in the kidney. The convulsions in eclampsia are probably due to spasmodic contraction of the arteries in the brain, but the assumed toxin causing this vasoconstriction is still mere conjecture.

91. **Nucleo-Proteids in Septic Affections.**—Pollak discusses the various theories in regard to the mechanism of immunization, immunity and serum treatment, and then describes 2 cases in which he injected nuclein and salt on theoretical premises in regard to the action of the nucleo-proteids in septic affections. He injected the mixture subcutaneously so as to take advantage of its leucotactic properties to the fullest extent. The prompt benefit that followed encourages him in advocating general adoption of this means of treatment built up on the broadest principles, aiming to increase by artificial aid the resisting powers of the organism in its struggle with streptococci by supplying to the organism some preparation of nuclein. The beneficial effect may not be due to the nucleic acid alone; the albuminoids of the nucleo-proteids certainly participate in it.

Berliner klinische Wochenschrift.

92 (XLIII, No. 23.) Zur Pathologie der Akroparäthesie. A. Pick.
93 *Zur Frage der Leukotoxin-Bildung durch Röntgen-Bestrahlung. R. Milchner and W. Wolff.
94 *Superheated Air plus Calomel and Iodin for Tuberculosis of Mucous Membranes.—Zur Behandlung der Schleimhauttuberkulose. E. Holländer.
95 Zur nasalen Behandlung der Epiphora. A. Meyer.
96 Experimenteller Beitrag zum Mechanismus der Magensekretion nach Probefrühstuck (gastric secretion after test breakfast). (Concluded.) L. Kast.
97 To Measure Temperature of Skin.—Beitrag zur Messung der Hauttemperatur. E. Weisz.
98 *Dietetic Regulations at the Homburg Spa.—Die Homburger Diäten. C. Pariser (Homburg).
99 (No. 24.) Ueber Spirochæta pallida bei congenitaler Syphilis. H. Beitzke.
100 Relations between Human and Bovine Tuberculosis.—Die Beziehungen der menschlichen Tuberkulose zu der Perlsucht des Rindes. L. Rabinowitsch.
101 *Thyroid Treatment of Obesity.—Zur Fettsuchtbehandlung mit Schilddrüse. M. Rheinboldt.
102 Untersuchungen ueber primäre Tuberkulose im Verdaungskanal (digestive tract). Summarized on page 813. J. Ipsen.
103 Spirochæta pallida (Schaudinn) und Organerkrankung bei Syphilis congenita. P. Huebschmann.
104 Study of Mouse Tumors.—Ueber Sarkomentwicklung bei einem drüsenartigen Mäusetumor. L. Loeb.
105 Die Radioactivität der Mineral-Quellen (springs). (Concluded.) H. Sieveking.

93. **Formation of Leucotoxin Under Roentgen Treatment.**—Milchner and Wolff exposed an extirpated but surviving spleen to the action of the Roentgen rays. Severe pathologic changes became evident after a few hours, while another spleen under the same conditions but not exposed to the rays showed normal structure. The extract of the exposed spleen, injected into animals, rapidly reduced the numbers of leucocytes. Injection of the unexposed spleen was followed by marked leucocytosis. Their research also confirmed in other ways the generation of a leucotoxin under Roentgen action.

94. **Superheated Air Plus Calomel and Iodin in Treatment of Tuberculosis of Mucosæ.**—Holländer reiterates that ascending tuberculous processes of the mucosa of mouth and nose occur much more frequently than is generally recognized, both in connection with lupus and without it. In contrast to the descending form, in which the condition of the diseased lung dominates the clinical picture, the prognosis is not unfavorable. The ascending variety displays a pronounced tendency to heal after removal of the primary focus, and complications in the lungs run a mild course. Treatment with superheated air without direct contact is capable of realizing a complete cure. In his extensive experience during the last ten years not a single case has shown itself refractory to this treatment. His success with quinin plus iodin in erythematous lupus encouraged him to try iodin in these tuberculous processes, with calomel for the local chemotactic agent. Fifteen minutes before applying the calomel he administered a tablespoonful of a 5 per cent. solution of potassium iodid. The calomel was applied as a dry powder to the lesion on cotton and left for twenty-four hours, or it was rubbed into the mucosa of the gum or a 1 or 2 per cent. oily suspension was injected directly into the tissue. The latter method induced necrosis of the tissues, but after the necrotic tissues were absorbed or thrown off the process was found remarkably influenced for good. In laryngeal tuberculosis he advises insufflation of the calomel. The most striking results obtained by this treatment were in the case of a girl with extensive lupus of the lip and upper gum. The entire upper lip had fallen in from the ulcerative process and she was unable to eat solid food. The calomel tampons were applied and the iodin given twice a day, and in the course of five weeks the entire process had healed. He has found it extremely beneficial in tuberculous processes in the bladder. He has treated over 100 patients with tuberculosis of the nasal mucosa, 30 with tuberculous and lupous processes in the mouth and gums, about a dozen patients with tuberculosis of the lips, including 2 with isolated primary tuberculosis, and a patient with extensive tuberculous processes on the tongue. In 3 cases he applied the superheated air to the larynx after laryngotomy. In 2 cases the process was of the descending type and the results of treatment were not satisfactory; in the other it was ascending and the patient was cured. In conclusion he urges more general adoption of this iodin-calomel treatment in tuberculous affections of the bladder mucosa as well as in those of the larynx and mouth.

98. **Dietetic Regulations at Health Resorts.**—Pariser describes the way in which the physicians of Homburg have satisfactorily solved the problem of providing a suitable diet for the various classes of patients taking treatment at the spa, without attracting attention to the patient or inconveniencing the hotel or boarding-house management. The affections most common among the patients are chronic gastric or intestinal catarrh, with diarrhea, chronic constipation, diabetes, heart affections, gout, nephritis and neurasthenia. Four special diets with a few subclasses have been found to answer the purpose, diet 1 for gastric affections, 2 for intestinal catarrh with diarrhea, 3 for constipation and 4 for diabetes. The local medical society supplies the landlords with the booklets containing the list of 220 different articles or dishes. The landlord marks the price opposite the dishes he intends to serve on that special day, or makes up the table d'hôte from the list. He is supplied with a fresh lot of the booklet menus for each day. Opposite the name of each dish are the figures 1, 2, 3 and 4 in parallel columns or the space for one of the figures is left blank. The absence of the figure shows that the dish is forbidden in the diet represented by the figure. The booklet contains also a brief presentation of the principles that guide the selection of the diet, with also general and special remarks. These booklets are supplied at cost price, and have been gratefully accepted by the landlords, while from the medical and scientific standpoint they are regarded by all who have seen their workings as a great advance. The daily booklet menus are supplemented by a large wall table that hangs in each kitchen and bears in large type the four "diets" and subdivisions. The forbidden dishes are printed in red ink, the others in black. The table contains also a few of the "guiding principles" in a brief summary. The system has been in use now for a year or so, with, it is said, constantly increasing satisfaction on the part of all concerned and great benefit to the patients. Each patient is given a separate booklet containing only the diet prescribed for his individual case when he enters on the "cure."

101. **Thyroid Treatment of Obesity.**—Rheinboldt gives the details of 4 cases of obesity in which thyroid treatment was given, supplemented by copious ingestion of albumin, to supply the demands of the over-nutrition consequent on the thyroid treatment. While the thyroid extract is being taken he assumes that about 3,000 calories above the ordinary are required, and if this extra supply is not given from without, the patient's own albumin is drawn on and his general health suffers. In the 4 cases described the treatment proceeded without

the slightest by-effects, which Rheinboldt accepts as confirmation of his theoretical reasoning. He urges that the thyroid treatment should be begun very gradually, and the dose always be restricted to the effectual minimum. The tablets must be thoroughly chewed. At least 20 per cent of the calories needed should be supplied in albumin, preferably meat. In his experience the elimination of water was much promoted by the thyroid treatment.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

106 (XXXII No 30) Grundsatze der Behandlung der Appendicitis E Sonnenburg
107 *Relations between Physical Behavior and Action of Drugs—Die Beziehungen zwischen dem physikalischen Verhalten und der Wirkung der Arzneistoffe E Frey
108 Study of Living Spirochetes—Ueber Beobachtungen an der lebenden Spirochæta pallida A Beer
109 *Bemerkungen zur Desmoid Reaktion H Sahli
110 *Experimentelle Untersuchungen ueber fermentative Fettspaltung im Magen (splitting of fat in stomach). F. Heinsheimer
111 Ueber Garrulitas vulvæ W Schulein
112 (No 31, *Greifswald Festschrift*) Historical Sketch of Greifswald Medical School—Geschichtlicher Ueberblick ueber die medizinische Fakultat P Grawitz
113 *Ein Beitrag zur Vererbungslehre (heredity) K Peter
114 *Zur Methodik der Untersuchungen der Fettresorption im Darm (absorption of fat in intestine). M Bleibtreu
115 Ueber teratoide Geschwulste im Becken-Bindegewebe (tumors in pelvic connective tissue). P Grawitz
116 *Ueber senile Atrophie der Augenmuskeln (ocular muscles) Thiele and P Grawitz
117 Testing of Drugs on Healthy Persons—Die Arzneiprufung am gesunden Menschen H Schulz
118 *Changes in Germs by Cultivating them in Certain Species of Animals—Ueber die Veranderung der Pathogenitat und Virulenz pathogener Organismen durch kunstliche Fortzuchtung in bestimmten Tierspezies und ueber die Verwendung solcher Organismen zu Schutzimpfungszwecken F Loeffler
119 *Zur Gramschen Farbungsmethode (staining technic) F Loeffler
120 *Komplementablenkung und Blut Eiweiss Differenzierung (biologic blood tests) Uhlenhuth
121 *Record of Heart Movement at left Auricle—Die Registrierung der Herzbewegungen am linken Vorhof O Minkowski
122 *Influencing of Absorption by Diuretics after removal of Kidney—Ueber die Beeinflussung der Resorption durch Diuretika nach der Nierenexstirpation S Weber
123 *Ueber die Beziehungen der Bence Jonesschen Albumosurie zum Eiweisstoffwechsel (and albumin metabolism) E Allard and S Weber
124 *Ueber Asthma bronchiale P Strubing
125 *Ueber die Haufigkeit und operative Prognose der Bauch Aktinomykose des Menschen (of human abdomen) P L Friedrich
126 *Suction Hyperemia for Differentiation of Cancer—Die Verwertung der Saugapparate zur Diagnose bei bosartigen Geschwulsten C Ritter
127 *Zur Frage des Cardiaverschlusses der Speiserohre (closure of esophagus) F Sauerbruch and R Haecker
128 *Zur Chorea gravidarum A Martin
129 *Zur Colpohysterotomia anterior Ph Jung
130 *Prognose und Therapie der perforierenden infizierten Augapfelverletzungen (injuries of eyeball) O Schirmer
131 Zur Kenntnis des Streptococcus mucosus als Erreger der akuten Otitis media Wittmaack
132 Intelligenz Prufung von Rekruten und alteren Mannschaften E Schultze and C Ruhs
133 Ein Beitrag zur Diagnostik der Pulpakrankheiten Schroder

107 **Relations Between Physical Behavior and Action of Drugs**—Frey shows how the physical properties, the solubility in water or oil, the dissociation into ions and the diffusibility are important for the medicinal effects of drugs Sufficient has already been learned to explain many of the effects observed as he illustrates by specific examples

109 **The Desmoid Reaction**—Sahli warns against the desmoid capsules on the market, having always insisted that the physician must make the little desmoid bag for himself at the time of using for reasons which he states Physicians who have not had successful results with the desmoid test have many of them confessed that they knew of Sahli's work only by brief summaries in other journals and he says that it is not fair to any method to decry it from tests made in ignorance of the author's minute technic

110 **Splitting of Fat in the Stomach by Action of a Ferment**—Heinsheimer's tests were made on animals and on a young woman with an artificial esophagus who submitted to various series of experiments the first instance of the kind in an adult The gastric juice was collected as it flowed naturally, free from admixture of intestinal or pancreatic secretions The fundus secreted a specific ferment which contained a fat-splitting ferment This ferment seems to be exceptionally active in infants

113. **Inheritance of Maternal Characteristics by Larvæ.**—Peter's experiments were with the larvæ of the echinus or sea urchin, and they showed a marked transmission of maternal characteristics without admixture of the paternal. The findings suggest that the laws of heredity are more complicated than hitherto assumed and that different organisms are regulated by different laws.

114. **Research on Absorption of Fat in Intestines**—Bleibtreu describes the technic with which he was able to study the absorption of fat in the isolated, ligated intestine. Cats were the animals used and the substance injected was a soap in the nascent phase An emulsion of cod-liver oil or olive oil was emulsified by shaking it in water with a little dilute soda solution. To this was added a little dried, pulverized cat pancreas tissue and some bile or solution of salts from ox bile. The needed alkaline carbonate was supplied by the mucosa of the intestine. This mixture was injected into the isolated intestine and the abdomen closed. When examined six or eight hours later, the chyle vessels were found as surcharged with fat as after a copious meal of milk. A control loop without the addition of bile to the mixture showed none of this absorption He thinks that the technic described will be found useful for further research on intestinal absorption.

116 **Senile Atrophy of Ocular Muscles.**—Thiele describes a case and suggests that what is generally called amyotrophic atrophy of the ocular muscles is in reality merely senile atrophy.

118 **Modification of Virulence of Micro-organisms by Cultivation in Other Species.**—Loeffler reports among other findings that the germ of foot-and-mouth disease loses its pathogenic properties for cattle after passage through young pigs. He describes the technic by which germs thus modified by being cultivated in animals of other species can be utilized for protecting immunization.

119. **Gram Staining Technic**—Loeffler has been experimenting with various dyes to improve the Gram technic, if possible. He obtained much better results with methyl violet 6 B and methyl violet BN dissolved in a 1 or 2 5 per cent. aqueous solution of carbolic acid in the proportion of 1 to 10. The first mentioned is most excellent for all the micro organisms tested except the pneumococcus; for this the second dye is preferable. The carbolic solution must be freshly prepared

120 **The Biologic Blood Tests.**—Uhlenhuth has found that dirt straw, urine, tuberculin and various other substances liable to be encountered with a specimen of blood sent in for examination "divert the complement"—which is the basis of the hemolytic blood test recently put forth by Neisser and Sachs, mentioned on page 310 of the last volume of THE JOURNAL This possibility of error deprives the test of accuracy under ordinary conditions, although not detracting from its value in the laboratory where extraneous contamination can be excluded Comparative research with the two methods, the hemolytic and the precipitating biologic test, gave instructive findings among others in regard to inoculation of monkeys with normal human albumin for serodiagnosis of syphilis for instance.

121 **Record of Movements of Heart at Left Auricle.**—Minkowski has devised a means to record the movements of the left auricle by a registering apparatus connected with a sound introduced into the esophagus under Roentgen control. He uses an ordinary soft Jacques sound with an opening in the side, over which is drawn a long, narrow rubber bag tied above the opening By blowing into the sound the little bag is inflated The sound above is connected with a Jaquet sphygmocardiograph and the heart beat, as felt in the esophagus, is registered on the drum The bag is inflated until it fits tight in the esophagus opposite the heart, without pressure Specimens of curves thus obtained are given.

122 **Action of Diuretics After Removal of Kidneys.**—Both kidneys were excluded by a ligature in rabbits and various diuretics then administered or injected The results demonstrate. Weber thinks that the diuretics of the caffein group not only affect the endothelium of the kidneys, but also the extrarenal capillaries and thus they promote metabolism They act not only on the kidneys, but have also a general capillary action

123. Albumosuria and Albumin Metabolism.—Allard and Weber report the findings in a carefully studied case of albumosuria in a man of 54. The amount of albumose eliminated was out of proportion to the possible sources ingested, especially during febrile states, suggesting that the albumose was derived from destruction of the organic albumin.

124. Bronchial Asthma.—Strubing gives a comprehensive analysis of the various theories that have been suggested in regard to the etiology of bronchial asthma. For diagnosis and treatment it is indispensable that the various disturbances should be sharply differentiated and each one traced to its true origin. When the asthma has developed on the basis of a neurosis, other nervous manifestations are liable to be encountered. He has found it possible to train healthy persons until they could imitate the attack of asthma. By the same means he believes it possible to train the asthmatic until they can control the attacks and finally cure them altogether. Treatment based on this principle will be described in a later communication.

125. Abdominal Actinomycosis.—Friedrich states that in fully 4 per cent. of the 200 patients operated on at Greifswald for inflammation of the cecum during the last three years, the lesion proved to be actinomycosis. Of the 8 patients treated by extensive resection into sound tissue, 7 are still living in good health. It has been the experience hitherto that the affection is liable to recur during the fifth to the sixth year after two or three years of peace, but the patients in the cured cases seem to be perfectly well.

126. Suction Therapy for Differentiation of Malignant Tumors.—Ritter has found suction cups extremely useful for aspirating particles from tumors and fistulas for microscopic examination without danger of hemorrhage or of accelerating the growth of the tumor. In one case described a dubious tumor in the upper abdomen showed fluctuation. A puncture opening was made with a wide cannula and a cupping glass, such as Bier uses for the breast, was applied daily. In a few days the edema had subsided and the tumor could then be palpated. Jelly-like masses were aspirated by the suction, and the patient was much relieved and gained five pounds in weight in seven weeks. The opening was enlarged by a small incision and scraps were obtained for microscopic examination by means of forceps introduced into the tumor through this opening. He has applied this suction therapy in a number of other cases, mostly inoperable cancers. It always brought great relief, while no untoward effects were observed in any instance. In the exceptional cases requiring unusual diagnostic measures the suction cup will be found very useful.

127. Closure of Esophagus from Stomach.—Sauerbruch and Haecker report experiences on dogs which suggest that the stomach closes the entrance into the esophagus by a kind of valve caused by the pressure of the fundus on the esophagus. This is sufficient to prevent reflux of stomach content into the esophagus even after the cardia has been completely excised. But if the vagi are severed, the swallowed food does not pass down into the stomach, showing that peristaltic action is necessary to overcome this valve closure of the entrance into the stomach.

128. Chorea of Pregnancy.—Martin states that in all his extensive experience with chorea in pregnant women he was never compelled to interrupt the pregnancy except in 3 cases. Medicinal treatment always proved sufficient to conquer the trouble in others. In these 3 cases the menacing chorea rapidly subsided after expulsion of the ovum. Two of his patients exhibited chorea with each recurring pregnancy. In one patient the chorea developed in a pregnancy after an attack of acute articular rheumatism after a normal pregnancy, and reappeared in the succeeding pregnancies with increasing intensity. He advocates bromids, although iron and arsenic may suffice for the milder cases. His formula is sodium bromid and ammonium bromid, each 2 gm., and magnesium bromid 4 gm., in doses of from 2 gm. to 8 gm. a day. He never found it necessary to go above these doses. Complicating endocarditis and meningitis, of course, are indications for more energetic measures. He never observed any untoward effects during the long continued bromid treatment, although 13 days after its discontinuance in one case two attacks of heart weakness were observed. They certainly had some connection with the bromids which had been taken for 81 days.

129. Anterior Colpohysterotomy.—Jung says that 3 out of 8 women treated by anterior colpohysterotomy succumbed to previously existing affections which had been the indication for the intervention. He asserts that this operation should be restricted to cases in which there is direct danger for mother or child, or both, and the soft parts are still unprepared for delivery. Such conditions are observed in eclampsia, severe nephritis, uncomplicated heart defects, premature detachment of the normally located placenta, and in acute general affections such as pneumonia. Under other conditions, anterior colpohysterotomy should not be done, enticing as it may appear.

130. Treatment of Perforating, Infected Wound of the Eyeball.—Schirmer has had only 2 cases of sympathetic ophthalmia in 157 cases of perforating, infected lesions of the eyeball. He ascribes this fine record to his energetic treatment with mercurial inunctions, saturating the system with mercury, by inunctions of blue ointment, rubbing in every day from 6 to 9 gm. until he has used up from 150 to 200 gm. in the course of nine to twelve weeks. A few instances of mild stomatitis or mercurial exanthem required the suspension of the inunctions for a few days, but otherwise he met with no signs of intolerance. A most important factor in treatment is the bed rest which he enforces until all inflammation has subsided, sometimes for from four to six weeks. Getting up too early is almost invariably followed by recurrence of inflammation. The inunctions are made morning and evening, rubbing in half the daily dose each time. This general mercurial treatment is completed by subconjunctival injection of 0.3 c.c. of a 1 to 2,000 solution of corrosive sublimate. By this energetic general and local mercurial treatment he has saved many eyes when the patients were on the point of having them enucleated. Sympathetic ophthalmia developed in only two instances and in one the systematic mercurial treatment had not been attempted. In the other an operation had been done on the second eye. The impregnation of the entire system with mercury affects the disease germs not only in the eye, but wherever else they may lurk. He was able to save 103, that is, 66 per cent., of the 157 injured, infected eyes that have come under treatment during the last ten years. Ninety, or 57 per cent., were left with more or less vision. Sympathetic ophthalmia was never observed during or within three months of the course of mercurial treatment. The main points are to give enough mercury and to keep it up long enough. Out of 41 cases in which there was still a foreign body in the eye, the results were excellent in 27. The outcome was even better in the cases with retained foreign body than in those without. The iron splinters were always extracted with the magnet. The results in all cases were far better the earlier the treatment was commenced.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

A TEXT-BOOK OF GENITO-URINARY DISEASES, Including Functional Sexual Disorders in Man. By L. Casper, Professor in the University of Berlin. Translated and Edited with Additions by C. W Bonney, B.L., M.D., Assistant Demonstrator of Anatomy, Jefferson Medical College, Surgeon to the Southern Dispensary, Philadelphia. With 213 Illustrations and 23 full-page plates, some in colors. Cloth. Pp. 618. Price, $6.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

REPORT OF THE ROYAL COMMISSION ON THE DECLINE OF THE BIRTH-RATE AND ON THE MORTALITY OF INFANTS IN NEW SOUTH WALES. Vol. I. Together with Copies of Commissions, Diagrams, Statistical Evidence and Statistical Exhibits, etc., 1904, second session. Paper. Pp. 97. Sydney: William Applegate Gullick, Government Printer, 1904.

A TEXT-BOOK OF SANITARY AND APPLIED CHEMISTRY, or The Chemistry of Water, Air and Food. By E. H. S. Bailey, Ph.D., Professor of Chemistry, University of Kansas. Cloth. Pp. 343. Price, $1.40. New York: The MacMillan Company, 1906.

TRANSACTIONS OF THE MEDICO-CHIRURGICAL SOCIETY OF GLASGOW, edited by H. McLaren, M.B., C.M., Editorial Secretary to the Society. Vol. V. Sessions 1903-1904, 1904-1905. Cloth. Pp. 301. Glasgow: Alex. MacDougall, 1906.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

Vol. XLVII. CHICAGO, ILLINOIS, SEPTEMBER 29, 1906. No. 13

Original Articles

PROPRIETARY MEDICINES.*

A. JACOBI, M.D., LL.D.
NEW YORK.

Goethe once said that the most interesting book that could be written would be a treatise on human errors. In that book, large like a library, the history of quackery—well meant or deceitful—would fill a large place. The distrust of medicine and its powers is as old as the world, for not many ever knew or cared to appreciate what medical science or art is capable or not of accomplishing, or should be held responsible for. Besides, the more uncultured or uncontrolled the human intellect the greater is the predominance of mysticism. In Greece quackery was rife and Aristophanes made it the subject of ridicule. The elder Cato, who advised the use of cabbage against all sorts of disease and employed witchcraft and incantations for luxations, demanded the expulsion from Rome of the Greek physicians. The iatromechanics, who taught the direct interdependence of stars and man and prescribed pills compounded during the conjunction of Jupiter and Venus, and the medieval priests who cured with prayers and processions and auto da fés, must surely have met with failures and driven the sick somewhere else. Even the specialists among the saints, St. Anna the ophthalmologist, St. Judas the doctor for cough, St. Valentine for epilepsy, St. Rochus the veterinarian, may have made mistakes and proved incompetent.

Nor was the public always edified by the doctors in other respects. Hippocrates complains bitterly of the contests of doctors among each other. More than 2,000 years later Peter Frank thought and advised seriously that the only way to procure an orderly consultation was to call in the police. The maltreatment they were exposed to in the Middle Ages, the contempt in which wounds and ulcers were held, so that the medical faculty of Paris about 1300 committed their candidates by oath not to practice surgery; the barbarous methods of treatment by fire for the dangerous body fluids to which everything was attributed, and afterward the nauseating draughts with which the sick were punished until no better man than Hahnemann tried to redeem them—all that did not contribute to add to the dignity of the profession and to the confidence of the public. All that drove the masses into the arms of the sectarians and the quacks.

Then followed the era of scientific medicine, little more than half a century ago. It was built up on anatomy and physiology and was studied on biologic lines. We should have suspected that the darkness of quackery would disappear before the new light. On the contrary, it has grown in geometric proportions until the accumulated ignorance of quacks and fakers has become a power in every land. The Germans, who like to style themselves the nation of thinkers, have more quacks than any other people. Indeed, Saxony and Bavaria have one quack to two regular physicians; Berlin itself has two to nine. It is in Berlin that 29 per cent. of the men among the quacks—including clergymen, workmen, stewards, bathhouse keepers, shepherds and university students—and 14.4 per cent. of the women had, before embarking in the practice of doing the sick people, collided with the law courts on account of theft, forgery and sexual crimes. It is Berlin that has a judge who, in discharging one of that ilk, said the man deserved the greatest confidence, for he was in possession of very good prescriptions obtained from the servant of a famous dermatologist.

Scientific medicine, as developed by the Vienna school more than fifty years ago, ended in nihilism. Patients, however, would not long be satisfied with being merely percussed and auscultated and autopsied. They had the pardonable wish to be healed and cured. But the only chance they were given was to serve as scientific material. With that they were not pleased and ran off to fill the offices and the coffers of the quacks. Then, after Skoda and Rokitansky, came Virchow, the great man of the century, the enemy of mysticism and obscurantism, the daily discoverer of new facts and new methods in pathologic anatomy, the founder of the cell theory, the great anthropologist and hygienist, the assiduous therapeutist of the individual man and of society, the very realization of what Aristotle meant by his "politician," that is, the philosophical and scientific statesman. The great mistake of his life resulted from his democratic confidence in the people. His idealism moved him to believe that the people would instinctively distinguish between the physician and the quack; it was on his advice that the Prussian parliament opened the doors to the fakers and reduced the medical profession to a trade. That was in 1869. He learned too late that people do not know who is who in medicine. People are not even taught by lectures or pamphlets or books, which are superfluous to the physician and not read by the masses. It is their nature to prefer to be in opposition at all hazards. They would rather pay hundreds of millions annually for pseudo-doctrines as displayed in books and journals and for proprietary medicines.

Do you care to know about how many there are? Up to Oct. 12, 1900, there were United States patents for 321 disinfectants, 30 extracts, 48 hair dyes and tonics, 180 insecticides, 376 internal remedies, 56 plasters, 371 topical remedies, 78 veterinary medicines. There were trademarks for drugs and chemicals, 319; medical compounds, 5,794, which increase at the rate of 250 annually. The State Board of Health of Massachusetts has examined about sixty proprietaries for their percentage of alcohol, according to the board's report

---

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Howe's Arabian Tonic, "not a rum drink," contains 13.2 per cent.; Parker's Tonic, "purely vegetable," recommended for the cure of inebriates, 41.6 per cent.; Schenck's Seaweed Tonic, "entirely harmless," 19.5 per cent; Copp's White Mountain Bitters, "not an alcoholic beverage," 6 per cent; Greene's Nervura, 17.2 per cent.; Hoofland's German Bitters, "entirely vegetable and free from alcoholic stimulants," 25.6 per cent.; Kaufman's Sulphur Bitters, "contains no alcohol," 20.5 per cent. and no sulphur; Whiskol, "a non-intoxicating stimulant," 28.2 per cent.; Golden's Liquid Beef Tonic, "for treatment of alcohol habit," 26.5 per cent.; Hood's Sarsaparilla, 18.8 per cent.; Peruna, 28.59 per cent.; Lydia Pinkham's Vegetable Compound, 20.61 per cent.; Kilmer's Swamp-Root, 7.32 per cent.

We, the doctors, like Virchow, our great master, are responsible for a great deal of this injury that is done to the people. For a baby it is we that prescribe artificial foods, the composition of which we do not know. What Nature gives us at a low price—milk, cereals, salt and sugar—we know and therefore underestimate. Nature is democratic and offers the best she has for the rich and the poor alike. We covet what is unknown and high-priced. We prescribe nostrums of known or unknown composition; the latter is not far from criminal, the first would be excusable but for two reasons. One of them is that the manufacturer looks for the good he can do to himself, and that factories are not run for your benefit; the second is that an unalterable formula, though its composition may correspond with the label, should not be used by the physician who deals with a variety of cases, ages and circumstances. I do not blame a layman who indulges in self-medication after being treated by his physician with a remedy he sees advertised in the glowing headlines of his daily paper. I have known at least one of the infant foods that was advertised and sold for twenty years, and then publicly discarded by the manufacturer, who claimed to have at last found the proper — probably cheaper — compound. The layman must be excused for refusing to pay a doctor in addition to the advertising expenses of the tradesman.

We physicians do more. We take medical journals that advertise nostrums, that print "reading notices" of proprietary medicines, old and new; that sell pages of their issue to the trade; that print eulogies of factory products in the shape of "original articles;" that alternate their medical and advertising pages. When I spoke of this abomination before the International Medical Congress of Paris in 1900 a Western medical journal of that style asked the appropriate question: "Who, after all, is this Dr. Jacobi? If it had not been for us, the journals, he would have lived and died in obscurity."

Thus it is that even the mind of the medical man is gradually poisoned. What these sheets do not, perhaps, accomplish fully, the glib agent—sometimes an M.D., who gains access to you by the card he sends in to you—will complete. He dumps his wares—his blotters, inkstands, paper-knives, pencils, blank books and almanacs—on your table, either personally or through the post-office. Well, he can afford it. For the poisonous anilin preparation with sodium bicarbonate which he baptizes with a hybrid name and which is prescribed by thousands of us yields him a thousand per cent. of profit. And how? It has been given admission to what should be your sacred medical book, the United States Pharmacopeia. That is why you find thousands of doctors and hundreds of apothecary shops with stacks of advertising sheets and quackish booklets, but without a United States Pharmacopeia or the American Pharmaceutical Association's formulary. That is why a friend found the expensive prescription of a prominent New York practitioner which read: "Remedium Spontaneum, Radway," and which meant no less than merely cheap "Radway's Ready Relief." The same friend took the trouble of examining 50,000 prescriptions compounded in a number of drug stores. Between 1850 and 1873 he met on the prescriptions of physicians no nostrums and no machine-made tablets; in 1874, 1 in 1,500; between 1875 and 1880, 2 per cent. of them; 1880-1890, 5 per cent.; 1895, 12 per cent.; 1898, 15 per cent.; 1902-1903, from 20 to 25 per cent. In a large drug store, one of the gaudy ones, to which the prescriptions of our fashionable doctors are sent, I was assured that 70 per cent. of the prescriptions sent in by reputable physicians contained either nostrums pure and simple or as a part of a compound.

Perhaps it would lead too far to examine all the reasons for that demoralization. But one of them should be generally known and appreciated, which is that there are very few medical schools a graduate will leave, diploma in hand, with the knowledge and practice of writing a prescription. Our medical schools neglect their duties by thus omitting to teach the art of medicine in combination with what is exclusively, and pompously called "science." Let the schools remember what every one of us general practitioners can tell them, that medicine means both science and art. I have here the prescription, dated April 14, 1906, which was given to a patient, who swallowed the stuff, by the professor of pharmacology and therapeutics in one of the great universities between the Atlantic and the Mississippi—very far from the Mississippi—which is a mixture of scientific and queer langage, viz., "Bili-salol"—what is bili-salol in the Pharmacopeia?—"0.25, dentur tales doses No. C, three to five pills after meals three times a day."

If there is so much proprietary medicine prescribed, and so much quackery, clear your own skirts, professors and doctors. The quacks and manufacturers smile at our unctuous words and unclean hands.

PROPRIETARY MEDICINES AND THEIR ABUSES.*

GEORGE DOCK, M.D.

ANN ARBOR, MICH.

Proprietary medicines are substances which some one has an exclusive right to make or sell for medicinal purposes. The exclusive right may depend on secret methods of manufacture, or on a patent on the method of preparation, as in Germany, or on process and substance both, as in America, or on a copyright on the substance. A patent on the name, or a copyright, is one of the most effective methods of acquiring and maintaining exclusive rights in the case of medicines whose virtues are fictitious, though secrecy is in some cases equally effective, for a time.

Proprietary medicines are not either good or bad by reason of their origin. In the language of the day, none are "ethical" or "unethical" *per se*. The possibility of greatest danger occurs among secret preparations and depends partly on the fact that secrecy regarding a remedy may have more serious consequences than secrecy in the manufacture of steel or rope and many other indispensable articles. The chief objection is that no dependence can be placed on the constancy of action of such substances, and that no certain comparisons can be made of observations on their action. They are not fit for scientific deductions.

---

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

There is no essential difference between proprietary medicines advertised exclusively to physicians and those advertised to the general public—the former in medical periodicals or special circulars, the latter in newspapers, handbills or almanacs, or on rocks, fences and barns. These are, perhaps, more frequently of secret composition, but recently this difference has been abandoned with great ostentation by some makers of so-called "patent" medicines. One or the other may be honest in intent and harmless or even useful in effect, just as either one may be fraudulent in conception and dangerous in use. The same lawless nomenclature is followed in both cases, the euphonious or hideous, outlandish or suggestive names being much alike in all. As a further evidence of similarity, a preparation that begins most blatantly in newspapers or on fences may in time find a welcome in reputable medical journals, and, on the other hand, a remedy first advertised to and used by physicians may in time be advertised in newspapers or form the leader in a cut-rate drug store or on the drug counter of a department store.

It is difficult to discuss proprietary remedies in a comprehensive way, but impossible to specify without becoming lost in the endless confusion they present. Certain classes stand out prominently. So there are synthetic compounds, active principles and new salts, real discoveries in chemistry that may have the virtues and drawbacks of chloral hydrate, sulphonal, urotropin, of salol, codein, cocain and others. They are usually put on the market with very little preliminary testing, but with the most sweeping claims. There are mixtures of these with other substances, sometimes representing an advance in pharmacy, often not. Then, there are preparations, whose chief recommendation is that they are of pleasing appearance or taste—"elegant," in the language of practical pharmacy. Though no more efficient than plainer preparations, they seem capable of filling a useful purpose, but are often hampered by secrecy of composition or unfounded claims of far-reaching therapeutic action. Expensive advertising and lavish distribution of "samples," neither of which should be necessary in legitimate trade, enormously raise the price at which these are sold.

It is unfortunate that the laws and customs of ownership do not permit a clearer separation of various classes. There is a deep-seated objection, on the part of most physicians, to the taking out of patents on such inventions as instruments or drugs, but it seems to me that this attitude is wrong in principle and partly responsible for a good deal of the demoralization now obviously existing. I am speaking, of course, of genuine discoveries and not of mixtures or formulæ.

It is a curious and paradoxic fact that no objection is made to physicians taking out copyrights on books, yet there is no essential difference. In the present organization of society, it is not only legal, but natural and proper, that any one making an invention or discovery of value should be able to realize a material return for his pains or ingenuity, and this right can best be preserved by patent. Jenners and Pasteurs will doubtless continue to investigate without hope or expectation of gain, for the love of experimentation, and will achieve not only glory, but also more material rewards, but that is no reason for checking inventive talent of a lower order. The man who invents a new dye may make a fortune. Why not the man who invents a drug that will do for pneumonia what quinin does for malaria?

Regarding instruments, if not protected, imperfect imitations are put on the market. No one is benefited except the makers, who deserve only the ordinary returns for their part of the transaction. If the inventor wishes to lower the price he can easily forego his royalties and give the buyer the benefit. I do not intend to discuss the question as to the profit derived from patents on books, instruments or medicines, though there is a matter for discussion on this point, but merely to emphasize the propriety of allowing inventors or authors to control, for a time at least, the manufacture of their products. The incidental fact that the price of the article may be enhanced by the patent does not affect the question materially. Prices of medicines will always be regulated, like other commodities, by the law of demand and supply. If fashion causes an elevation of price beyond the real value of the article, as occurs with many other things besides drugs, this does not seem a sufficient reason for interference with the well-known laws of trade.

Perhaps the strongest objection against the owning of patents on instruments or medicines by physicians, but one that is rarely expressed, is the danger of abuse in ways not open to the usual objects of trade. An author can hardly stimulate the sale of a book in any but obvious ways, but a medical man, especially if he has a reputation as a scientist, might excite an artificial demand for an instrument or a new remedy. Yet the danger of this is much more likely to exist, and to a greater degree, if the ownership is disguised, as it may be now, and in fact sometimes is. Publicity in such a case, as in others, seems the most promising check to dishonesty either intellectual or financial.

So far I have assumed that a proprietary medicine may be of value. Such a medicine may even be of very great value. Many of the newer nostrums, some of the very ones most objectionably advertised, have not only been imitated by manufacturing pharmacists openly patronized by the profession, but have even been admitted to the Pharmacopeia with a haste not characteristic of sound therapeutics.

I do not think we realize clearly enough the enormous waste of time and energy in the trial of new remedies. Many are doomed to early oblivion, as a perusal of the advertising pages of any series of medical journals makes clear. Just as the names of nostrums advertised in newspapers and trolley cars change year after year, so do those in medical journals. Many others would disappear, but for costly advertising, which is, of course, paid for by the purchaser.

Two sets of evils follow from this ever-changing but never-ceasing flood. On the one hand, the layman has perpetuated or strengthened in him the belief in the magical properties, as distinguished from the physiologic effects, of medicines—the faith in drugs as substitutes for right living. Or, as in the development of bacterial therapy and prophylaxis, he has set up a hope, if not a trust, in the use of antibodies in place of efficient public hygiene, e. g., typhoid inoculations instead of pure water and proper sewage; antirabic inoculations instead of proper dog laws, etc., etc. Or, again, if less credulous, he concludes that the art of medicine has no principles at all, that medicines "are for readiness, and not for propriety" (Bacon).

On the other hand, the physician who follows such methods fails to increase as he should in therapeutic experience and facility. Getting therapeutic knowledge, perhaps, but never therapeutic wisdom, he drifts along, depending more on the statements of salesmen or drummers than he does on those whose interests in drugs are chiefly in their therapeutic effects, and hardly at all on his own observations. Even if observations are carefully made and recorded, the accumulation fails because of the variety of data, as in the case of a physician I know who tried some three dozen creasote preparations in as many cases of consumption in a short time, and was unable to speak confidently of any one.

The making of new preparations and the haste to try them form a vicious circle. Synthetic drugs and mixtures were poured forth in response to the alacrity with which the first ventures in these lines were taken up. As the sick layman grasps at anything in the way of treatment, so many physicians prescribe new and untried drugs, and just as every soldier in Napoleon's armies carried a marshal's baton in his knapsack, so every assistant in a chemical factory dreams of and works for a new synthetic, and many a teacher whose ambition is supposed to be centered on "gathering pebbles on the seashore of science," is working just as hard on some similar scheme. The manufacturers gladly exploit any novelty, expecting the usual profits. The medical profession, as one of the most striking examples of the triumph of Hope over Experience, keeps on accepting the discoveries, repeating over and over the story of disappointment.

The natural tendency to believe everything, not always repressed by training, is skilfully fostered by the resources of the modern advertiser. Exaggeration is inseparable from the enthusiasm of an inventor and discoverer. Had it not been for the unproved assertion, based on perfect good faith, in the complete and permanent protection against smallpox, the use of vaccination would long have been delayed. There is some difference between the sanguine hopes of a discoverer and the studied rhetoric of an advertising expert, but the difference is not easy to see. In the case of proprietary remedies exaggerated claims of excellence at every point, assertions of freedom from the untoward effects inseparable from the action of remedies, insinuations of new properties and suggestions of the imperfection or uselessness of older remedies are all advanced with a skill born of keen competition.

Sometimes the assertions are so absurd that it would seem impossible for any one to pay further attention to the substance advertised, yet experience shows that this is not so. A few years ago a preparation was exploited which was claimed to contain live red-blood corpuscles, which latter were alleged to be capable of entering the body of the sick man and restoring it to health. The finding of the philosopher's stone, the realization of perpetual motion, or the existence of Dowie's healing power seem as easy to accept as theorems of Euclid compared with these claims. And yet this product, notwithstanding so disreputable a beginning and a later stage less daring, but just as cloudy, has become, if not the head of the corner, at least part of the basis of many a medical journal. The claims of organic iron preparations, of intestinal antiseptics, cardiac stimulants and antipyretics are almost as bad and do not require further mention.

Unfortunately, in all these claims, the manufacturers are aided by testimonials from physicians, just as dangerous as the testimonials of governors and congressmen that fill certain newspapers. The plain puff is too obvious, and pseudo-scientific articles are published often with great luxury of illustration.

The manager of one of the most iniquitous frauds ever sold once told me with honest pride that his firm never made a statement it did not believe. I was astounded at first, but in looking through the literature I found the claim was literally true. Everything necessary to exploit the material was furnished by physicians. That the information was given gratis may be a mitigating circumstance.

There is another method of furthering the use of new preparations, becoming so widespread as to suggest a conspiracy, though the growth may be merely the result of "mob suggestion." This is the vilification of critics of indiscriminate or irrational drugging. "Who is not for us is against us" seems to be the motto of drug sellers, and just as, sixty years ago, Skoda was called a therapeutic nihilist because he believed that bleeding and tartar emetic were not necessary in the treatment of people with pneumonia, so now any one who does not at once and always prescribe large and numerous doses of drugs is given the same term—and with the obvious intention of making him odious.

What are the remedies for the abuses connected with the sale of proprietary medicines and which I have imperfectly sketched in the preceding lines? To many the prospect seems hopeless. Drugs, like a mighty flood, pour out so rapidly that many are swept off their feet. Yet the situation is neither unique nor hopelessly bad. Sound, temperate Hippocratic medicine has lived through even worse phases. The physician of the sixteenth and seventeenth century had no coal-tar preparations and no sera, but he had more than 3,000 plants in his materia medica, not to mention minerals and animals of all kinds from worms to man, their organs, secretions and excretions. Medicine survived this, the richer by a few remedies of real value, and there seems no reason to fear that oblivion will overcome the less useful of the newer discoveries and permit the good ones to take admitted rank.

How to secure the really valuable new remedies is the problem now before all earnest therapeutists. Repression by force or by enactment can never serve against such a condition. The right to investigate, to discover, if wished for to patent new remedies, need not be curtailed. Authoritative bodies, governmental or otherwise, can do much to assist in determining the status of such products, but the final verdict must come from the great body of practical therapeutists, the physicians in actual charge of sick people. Such a body as the Council on Pharmacy and Chemistry of this Association may perform an important function in making impartial examinations and reports on new substances of obscure composition, but it can not determine whether or not such substances shall be used. The American Pharmacologic Society can also carry on an equally valuable work in making further tests. But no such body can be depended on to disclose all the good things and repress the bad, and just as far as it prevents the development of the spirit of responsibility and of criticism on the part of the physician will it do harm.

Medicine has never been successful when bound down by traditions, schools and authorities. It has only flourished when it made use of every resource that science or chance could bring—whether the cinchona bark of the savage, the hydrotherapy of the peasant or the synthetic compounds of the university professor—testing all things, holding fast to the good.

I shall take the liberty of discussing briefly some of the solutions for the present abuses.

One of the most general is the exclusion of advertisements of proprietary medicines, at least those of unknown composition, from medical journals. There are some good reasons why this view should receive consideration. A scientific periodical certainly makes a more pleasing impression when it is free from all advertising. In the case of journals of a more practical tendency it is convenient to be able to find advertisements of drugs, books, instruments and other supplies, but even if classified it is difficult to find what is wanted if there is a preponderating number of notices of drugs, mostly unknown. These are particularly exasperating when inserted among the pages of text, as in some of the most reputable English periodicals. On the other hand, merely keeping such advertisements out of journals would not stop the nuisance, for the same matter, or more, would be forced on us in other ways—sample copies, circulars and the like. Nor would the exclusion of such matter from journals be a likely aid to the morals of those who now fall victims to the wiles of the advertiser. In the practice of medicine, virtue that comes only from lack of temptation is as doubtful a quality as in other cases. Moreover, the daily or weekly appearance of an advertisement can not be sufficient reason for any competent person to patronize the thing advertised. Surely the readers of medical journals do not buy every carriage or automobile, or even every book, any more than they buy all the bargains advertised in the daily paper. Medicines, like get-rich-quick schemes, furnish a bait of unusual attraction, but both can be withstood.

It can hardly be expected that physicians will abandon the reading of journals with advertisements of nostrums, but if the goods advertised were not bought the obnoxious pages would soon disappear.

It would seem possible to exclude the most exaggerated or obviously baseless claims, but this is not so easy as might seem at first glance, as the following experience shows: In a recent number of the *Fortschritte der Medizin* there was a brief notice of a preparation loudly advertised in America, with a fling at the "credulous colleagues" in "the land of unbounded possibilities." Yet in the same number of the same journal, as in all the previous numbers, were many advertisements, to me just as bad, including one of a remedy for gout, sciatica, "all rheumatisms," influenza and nervous headaches, the same being also an expectorant useful in putrid bronchitis, typhoid and pneumonia, and a specific for whooping cough, asthma, cardiac neuroses and arteriosclerosis!

A decided gain would come from a freer criticism of all kinds in our medical literature. A fear of frankness seems to bind it all—in abstracts, in book reviews and in editorials. Much of this depends, no doubt, on trade affiliations, but it seems to spread beyond them. I may be permitted to cite an example: A plain and easily controllable investigation of the claims of a widely advertised mud preparation was published in The Journal of the Association at my instigation. Personal communications and letters from many physicians confirm my idea that the report was one of value. Within a few days after it appeared a circular letter was issued to medical journals, giving a misleading account (though it had been believed by the writer) of the origin of the article, and requesting editors of other journals not to abstract it. The scientific statements in the article were easy to test, and were important, no matter how the article originated. Most of the periodicals, however, followed the wishes of the advertisers and the article was conspicuous by its absence from the abstract columns of the great bulk of journals.

Incidents of this kind, for I am sure the experience mentioned is not unique, indicate one of the greatest obstacles to the freedom of medical science.

Recently a very clear-minded critic of affairs has pointed out the advantages of greater frankness on the part of physicians toward patients. I think most of us agree on this, at least in the case of intelligent patients. But is there not even greater need of frankness among ourselves, and especially of plain speaking, without cant, prejudice or passion, as regards one phase of one of the greatest evils of the day—the nostrum evil?

At best proprietary remedies will continue to be made and advertised, and all sorts of claims will be made for them. We as a profession can not directly stop these things, even if we think it desirable to do so.

We can, however, learn how to use better than we do now well-known remedies and in that way lessen the use of the others. And, although we can not draw a sharp line between unprincipled time-serving or the affectation of ultramodernity, we can at least express our opinion of crude experimentation. We can assume that the physician who depends on the remedies advertised in display type is no more deserving the credit of advanced views than one who should sell his horses or automobile and buy a balloon for making his daily calls. We can look as coolly on new drugs as we do on a new phase of mental healing or a new application of massage. If this were done, production would be less rapid, the vogue of each novelty shorter, the possible virtues of some more quickly determined.

At times, no doubt, some loss would come from this attitude, as it did from the neglect of the revelations of Holmes, Semmelweiss and Lister. Yet there would be compensations. Perhaps the loss of life from the delay of accepting asepsis was not greater than that from the indiscriminate use of coal-tar antipyretics.

How can the profession be brought to a better attitude as regards the present evil? Many think the solution is to be found in more teaching of prescription writing, of lectures on therapeutics. I differ from those who hold this view. What is needed is (1) broader and deeper training in preliminary and biologic branches and the cultivation of exact habits of mind; (2) a more intense study of pathology, not merely to acquire anatomic data, but to learn the actual results and extent of the lesions in common diseases, so that the student may offset speculation with fact; (3) a more intimate study of clinical medicine, that can only come from more prolonged and more personal investigation at the bedside.

In speaking of the evils of the nostrum habit among physicians do we not forget that, although we usually speak of the profession as a whole, the individuals vary enormously in capacity and opportunities for the study of medicine? Doubtless many graduates of hopelessly poor schools become sound and well-informed physicians, and equally doubtless some graduates of great schools fall into utter routinism, but is not the chief fault the existence of several scores of schools that never have given and never can give proper medical instruction?

To sum up, proprietary medicines are increasing as the result of natural developments. Their abuses spring partly from the exaggeration of legitimate commercial methods, partly from the credulity of the medical profession. The remedy for this part is wholly in ourselves. Let us do all we can to overcome this at least.

THE PHYSICIAN'S RESPONSIBILITY FOR THE NOSTRUM EVIL.*

RICHARD C. CABOT, M.D.
BOSTON.

As physicians we are largely responsible for the sale of secret remedies. We help to create the demand. We feed it.

We feed it because it is shown that 44 per cent. of the prescriptions filled at one of the best of our Back Bay drug stores in Boston call for nostrums—secret remedies of whose constituents we are ignorant.

The conditions are the same or worse elsewhere. The manufacturers and those whose living depends on the sale of these nostrums, have done their best to obscure the issue by vilifying the leaders of the present vigorous crusade against secret nostrums; I mean Dr. Simmons and Dr. Billings. The nostrum makers and a group of medical journals which are their organs, try to deceive us into believing that the great crusade for honest, open, intelligent prescribing and against fraud and ignorance in therapeutics, is all the work of those splendid leaders, Dr. Simmons and Dr. Billings. The truth is that almost every man of mark in the medical profession of the United States has put himself on record within the last year as being in entire accord with the policy of The Journal of the American Medical Association, and with the quite unanswerable arguments brought forward in this section by Dr. Billings a year ago. The leaders of medicine throughout the country are in accord on this matter and it is time for the rest of us lesser lights to stand up and be counted too. Any one who attacks Dr. Simmons and Dr. Billings attacks every one of the leading men in American medicine to-day. We, their followers, should stand ready to be hit, too, by every missile thrown at them, for the intelligence of the profession is solidly on the side of The Journal in this matter.

The issue is simply between light and darkness—between ignorance and knowledge. A man should know what he is prescribing and not pour down their patients' throats mixtures of whose ingredients and action he is ignorant. It is not a question of where these nostrums are advertised, or whether or not they are patented, or whether the Pharmacopeia contains or excludes them. The whole question for us is: Shall we be false to the confidence which our patients place in us? Shall we, who should safeguard their interests with the keenest watchfulness, desert our post and permit, nay advise them, to use medicine whose composition is wholly guesswork to us, though our patients trust us to investigate and to understand it?

I do not see how any honorable man can see two sides to this question. Suppose an investor went to his financial adviser for counsel on investments and was recommended to buy a certain stock. Suppose the investor to ask "What is the property? Is it manufacturing stock, railroad stock, mines, municipal enterprises?" Would he not be angry and indignant if his expert adviser should answer: "I don't know what it is. A promoter gave me some and said it was good, but I know nothing about it save what he told me." A pretty sort of adviser, this! False to his trust, surely; but we are far worse than that, for the financial adviser was dealing only with his client's property, while we deal with his life. They juggle with his dollars—we with his vital organs.

I believe there are not many in this audience who are not guilty—as I am guilty—of the sin of having used remedies—some of them dangerous—without knowing what they contained. I have used ammonol, before our Council on Pharmacy and Chemistry showed it up. I supposed (ignorantly, culpably) that it was a synthetic chemical compound, instead of an acetanilid mixture. I am ashamed of it. I shall try to do better, and never again to advise a powerful poison without knowing it, or an inert drug while supposing it, on hearsay evidence, to possess power. But that is just what is advised in 44 per cent. of the prescriptions filled in our Back Bay drug stores. If the public realized this it would be justly angry at our indolence and faithlessness in the high position of trust.

But, I believe that we not only feed the public demand for useless and harmful drugs, but also go far to create that very demand.

Babes are not born with a desire to take a drug for every symptom—they acquire this desire. Who teaches them? You and I do. We educate our patients and their friends to believe that every or almost every symptom and disease can be benefited by a drug. Some ignorant practitioners believe this, and we can not blame them, though we deplore the results of their indiscriminate drugging. But in my experience the educated physician who knows that only a few of his patients can be much benefited by drugs, gives out just as many prescriptions as the ignorant physician who believes all that the Pharmacopeia and the nostrum vendor tell him. The only difference is that the educated physician gives his drugs as placebos. In my opinion, the placebo habit does more harm than the habit of giving drugs to every patient with full faith in their pharmacologic action. But of this I shall say more in a moment. Here what I want to insist on is that so long as the chief visible, tangible, gustable result of a physician's visits is a row of medicine bottles, just so long will the patient tend to try to eliminate the middle man (the doctor) and buy the drugs himself, "patent" or pharmacopeial as the case may be.

If the result of the physician's visits were a reform in the patient's diet, a lengthening of his hours of sleep, better habits in bathing, ventilation and exercise, and a sleeping balcony, no patient would be such a fool as to think he could get these results out of a bottle of "patent medicine" or a box of headache powders; but when the net result of the doctor's expensive visits is medicine bottles, the patient learns his lesson, clings to his bottle, and eliminates the expensive visits. Result: $75,000,000 a year for secret remedies.

Placebos have another bad result. They weaken the confidence of the patient in the physician, because every placebo is a lie, and in the long run the lie is found out. We give a placebo with one meaning; the patient receives it with quite another. We mean him to suppose that the drug acts directly on his body, not through his mind by means of expectant attention. If the patient finds out what we are doing he laughs at it or is rightly angry with us. I have seen both the laughter and the anger—at our expense. Placebo giving is quackery. It also fosters the nostrum evil.

---

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

The "patent medicine" and nostrum industry will be seriously crippled when we do two things:

(*a*) Stop advising secret remedies which may be poisonous or inert.

(*b*) Stop fooling our patients with placebos.

The positive side of all this negative advice I have tried to explain in another paper.[1]

DISCUSSION.

SYMPOSIUM ON PROPRIETARY MEDICINES.

Dr. W. S. Thayer, Baltimore, said he agreed with Dr. Cabot. He related an occurrence in the South when he attended a country medical society and talked on the subject of typhoid fever, telling them what it was, etc. After going over the question of the pathologic conditions involved he told of what one could expect from the methods of treatment and talked very plainly regarding it. He did not know that a well-known drug firm had engaged men to make speeches during a recent campaign, telling of the good of intestinal antiseptics in the treatment of typhoid fever. If the members of that society had had the training that the members of the American Medical Association had, they would have known when that man talked such arrant nonsense. Dr. Thayer said that the better education of the physicians all over the country would do much in the solving of this problem.

There was a point in which he did not agree with Dr. Dock; he could not see the advantage to be gained by admitting the possibility of physicians patenting drugs, etc., for that was not the way for the practicing physician to make money; we should have a higher aim than that. It was a mistake and was likely to lead to more harm than good. The stand should always be taken that the medical profession should not patent or acquire individual rights in the discovery of anything which had to do with the treatment of the diseases which afflicted the human being.

Dr. H. A. Hare, Philadelphia, said that he wished to raise his voice in defense of the medical profession, and if he took on himself this defense, he did it because he wished to defend himself as well. He vehemently denied the truth of any statement made that members of the medical profession, particularly of Pennsylvania and of Philadelphia, had deliberately given placebos to patients with the idea of fooling or deluding them. He said he was in accord with the statements made by Dr. Thayer, and against those made by Dr. Dock, in what was said regarding numbers of the medical profession patenting drugs or instruments. In regard to patented remedies which possess therapeutic value he believed physicians should employ them. If they did not they would be depriving themselves and their patients of remedies which the more progressive members of their calling would use. It is a mistake to turn down everything because it is patented. He said he could mention drugs employed by all of them for many years which were patented and which they could not do without, such as phenacetin.

Dr. Hare said that a surgeon could recommend an instrument and name the man who made the instrument and not be criticized for it; but if a physician wrote an article and endorsed a certain drug as being of value, even though he did not mention the name of the maker, he would be under suspicion. Dr. Hare thought there should be a normal balance in this matter and that they should give rational consideration to the therapeutic possibilities of substances presented to them.

Dr. S. Solis Cohen, Philadelphia, said he wished to emphasize some points that had not been sufficiently brought forward in the papers. Distinction must be clearly made among the various classes of proprietary remedies: 1, "Patent medicines," so called, the nostrums sold to the public through advertisements, usually full of falsehoods, like peruna, the Pinkham medicines and their kind; 2, the nostrums advertised to physicians, the secret or partly secret "proprietary," sold to the public in part directly, in part through the prescription of careless, thoughtless or deluded practitioners, such as antikamnia and its congeners; 3, the proprietary not secret, for example, Squibb's ether or Hayden's creosotal; 4, the drugs patented and therefore not secret, as antipyrin and phenacetin; 5, patented drugs tainted with fraud because not conforming to the description in the patent.

He agreed with Dr. Hare that non-fraudulent patented drugs might be used by physicians without hesitation, but there was some danger that Dr. Hare's words might be misunderstood. When Dr. Hare spoke of using "illegitimate" or "unethical" remedies he might be misconstrued as supporting the use of secret remedies; in other words, nostrums, the drugs and mixtures of which the composition was concealed. This subject was so important and the nostrum manufacturers tried so hard to render the distinction obscure that there must not be left even by inadvertence a loop hole for misconception. Referring to one speaker's *peccavi* or rather *peccabat*, Dr. Cohen did not understand how any intelligent physician could wittingly order a medicine the composition of which he did not know, but that such a mistake was in this instance honestly made did not justify an indiscriminate denunciation of all other drug-giving. What is needed is intelligent use of drugs, that is to say, the use of known drugs, under suitable conditions. Should they abandon opium or digitalis because some one may use them unnecessarily? One great fault of secret remedies is that there is no guarantee of their uniformity. The composition of "patent medicine" and other nostrums might be changed day by day and has been changed materially in well-attested instances, as shown by careful analyses. One who prescribes antikamnia, for example, has no means of knowing whether it will be the same thing or something else to-morrow.

Dr. Dock's proposition for physicians to take out patents on remedies is an unthinkable method. The cure is worse than the disease. While we might yield to necessity and as he—Dr. Cohen—had already conceded, prescribe drugs of known composition patented by their makers, yet we should not encourage such a lowering of the traditional standards of the medical profession itself. It was to be regretted that they had not taken a decided stand, as indeed he, among others, had urged at the time, and refused to prescribe patented drugs when Knorr's antipyrin was first put on the market. The general issue would have been fought out then and there, and science and humanity would have won. Nothing would have been lost to therapeutics even had the introduction of antipyrin into clinical use been long delayed. Indeed, the temptation to exploit the drug for gain would have been removed, it would not have been so widely and wildly advertised or so much imitated, and perhaps thousands and tens of thousands of lives would have been spared that were lost through its use and that of other coal-tar antipyretics in typhoid fever, pneumonia, and especially influenza. The true sphere of usefulness and, above all, the limitations of the new drugs would have been well defined. Nothing would have been lost, and much would have been gained. It is too late to return to the *status quo ante*, but they can at least preserve what is left of the traditional heritage of the physician.

Dr. Woods Hutchinson, Redlands, Cal., asked that they all look at that medical barbarism, the United States Pharmacopeia, and the enormous lists of things that had been published. Anyone looking over those lists must have been struck with the great number of drugs that have been retained, and it is the fault of the profession that such a large number was retained. The remedy lies in our hands. At least one-half the pages should be cut out; instead, somewhere in the neighborhood of 1,500 or 2,000 remedies had been added. He believed the Pharmacopeia should be revised.

Dr. Albert Francine, Philadelphia, said that he thought it was worth while to review briefly what had been accomplished by the agitation during the past few years against nostrums and proprietary medicines in relation to the general public, to the accomplishment of legislation and to the profession itself. He said that the education of the public had proceeded rapidly and that they were becoming fully alive to the dangerous character of these mixtures. This was shown practically in the fact that the sale of "patent medicines" had decreased enormously throughout the country; and was also reflected in the public press, which now published frequent accounts of poisoning from headache powders and other nostrums, recognizing that the public was interested.

---

[1] "The Renaissance of Therapeutics, "THE JOURNAL, June 2, 1906.

Success had not been so marked in regard to getting the enactment of legislation. He wished that every state could accomplish the legislation which Massachusetts had just inaugurated, by which cocain could be sold only on a doctor's prescription and could not be an ingredient of any copyright mixture whatsoever; morphin could be present only in the proportion of one-fourth gr. to the ounce of solution; and alcohol could be used only in sufficient quantity to act as a solvent. This was certainly a long step in the right direction, and must, if enforced, be the death blow to the alcoholic nostrums and to many others containing cocain and morphin.

The most interesting and difficult phase of the subject and the field for their most legitimate efforts, was in the relation of the profession to proprietary medicines. Their use by physicians appeared to be increasing rather than diminishing. This arose from two things, carelessness and ignorance. Credit must be given to the manufacturing chemist for putting out very elegant mixtures, some of them with the formula on the bottle, and for the temptation thus held out to use them. But as Dr Billings had well said: "To the rational physician, mixtures even with a known formula are objectionable, for disease is never quite the same in different individuals and never quite the same in its different stages." Dr. Francine thought that too many members of the profession did not appreciate their responsibilities in this regard. He thought that the medical schools did not do their full duty in training their graduates in the arts of pharmacology and therapeutics, and in prescription writing. Graduates did not know how to write prescriptions, how skillfully to combine drugs, and did not, as a rule, subsequently familiarize themselves with them. Every graduate, even after a term of service in a large hospital, should diligently apply himself to this study, and it was because this was not generally done that they fell back on ready-made preparations. He thought there was justification for criticism of the usual methods of teaching therapeutics in the medical schools, though this phase of it was a difficult problem for the latter to handle or adjust properly. The physiologic action of drugs and prescription writing should be taught in close relation to their clinical application. It seemed folly to teach the use and action of the nitrites to second and third-year students, when they had little or no familiarity with the diseases in which they were indicated, and yet this was the usual course. It would seem wise, if the physiologic action of drugs must be taught at that time to supplement such theoretical teaching by practical work in prescription writing and prescribing in the fourth year directly to clinical cases in the wards and dispensaries.

Dr. Louis LeRoy, Nashville, Tenn., said that the speakers were laying all of the trouble, or most of it, at the door of the practicing physician, as if he could revolutionize public opinion. He said that he had found that the attitude of the public man now was about reflected by the attitude of the medical man of some one hundred years ago; it took one hundred years to come to the attitude and it probably would take another hundred years to come to the attitude of the medical men of to-day. While they might take some decided step, he felt only moderately sanguine over diminishing to any marked extent the public use of nostrums. Another thing he said should be borne in mind: the medical student came to them in the mental attitude of the general public and in that student they must build up this work. A great thing that had been lacking so long in medical schools was common "horse sense," as well as the ability to correlate what they got. Some of this could be cultivated to a certain extent, although some never would, and some never could. He said they were at fault in medical teaching, in that they did not teach medical students how to put two and two together.

Dr. Richard C. Cabot, Boston, in answer to what was said regarding placebos, said that he would charge no man with what he had not done himself and that he had given bushels of placebos, as all doctors do, to impress the patient. But when they gave placebos they were in precisely the same attitude as the quack. They were pretending to possess remedies and powers which, in fact, they did not possess. Dr. Cabot added that placebos were lies, because if they explained to the patient that they were inert and given solely to influence his symptoms through his mind, they would then be useless. It was only when they led the patient mistakenly to suppose that these inert drugs had genuine medicinal action, that they work on his mind. They should all do as Grover Cleveland, at the last annual meeting of the Medical Society of the State of New York, entreated them to do, namely, treat their patients like intelligent human beings; be open with them, be fair with them, treat them as they would want to be treated if they were sick.

Dr. George Dock, Ann Arbor, Mich., said that he would limit his remarks to the question of patients. He was prepared for the objections made against the patenting of medical inventions, and, in fact, expected even greater objections. He had at one time shared the views so clearly stated by Dr. Thayer. He thought that conditions had somewhat changed and that the objection to the patenting or dispensing of a secret preparation could not apply to the patenting of a discovery or invention of a new principle. A good deal has been said about the fact that Jenner did not take out a patent on vaccination. It would have been a great deal better for vaccination if Jenner had. He himself complained of the harm that was done by careless and ignorant vaccinators. If he had been able to control the standard of vaccine and the method of vaccinating for a few years, the result might have been very much better. A patent made the material public, or open, so far as its composition was concerned. He thought it was unfortunate that in this country they were able to patent the product. It would be very much better if the right were limited to patenting the process. Invention would be stimulated in still further perfecting the product. If a physician did not wish to take money derived from the patent of an invention it would be an easy thing to forego his royalties. On the other hand, if it is wrong to take out a patent on a remedial agent it would seem to be equally wrong to use the patented article. Dr. Dock said that he had not used ammonol, but confessed to having used Behring's antitoxin, adrenalin and modified milk, all of which he was informed were patented. He did not believe that these would have been any worse if patents had been held by physicians.

CIRRHOTIC CHANGES IN THE LIVER FOLLOWING A SINGLE INJURY.*

W. G. MacCallum, M.D.
Associate Professor of Pathology, Johns Hopkins University.
BALTIMORE.

It is well known that various poisonous materials circulating in the blood may cause the destruction of the cells of the liver, sometimes in very small foci, sometimes much more diffusely throughout the whole organ. In many cases, as has been emphasized by Opie, this destruction may occur fairly regularly in certain portions or zones of the lobule, while in other cases it is difficult to determine any such regularity.

Necroses of similar type may be produced experimentally, as shown by Pearce and others, but they most commonly occur in the course of acute infections and intoxications. When limited in extent they may destroy so little of the liver that no definite symptoms result and the injured area is in time replaced by scar tissue, the remaining liver tissue becoming hypertrophied to compensate for that which was lost. This process may become a more or less continuous one if the source of the poison persists, and the final result of such repeated injuries and healings is one or other of the varieties of cirrhosis of the liver. The changes involved in this I have discussed in detail in a previous paper.[1]

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

When the injury to the liver tissue is very extensive and involves at one time the greater part of the liver, symptoms at once arise, and such a condition which is commonly classed as acute yellow atrophy may quickly bring about the death of the patient. Recovery sometimes occurs, and the reparatory changes in the liver in such cases have been minutely studied. One case of this kind was reported in detail,[2] and since that time another case has come to my notice. This second case was that of a child who died of peritonitis following appendicitis, but who had otherwise always been well except for an attack of scarlet fever some months before. At autopsy the liver was found to be extraordinarily distorted by the presence of large prominent nodules of grayish, swollen-looking liver substance, each surrounding a central branch of the portal vein. Between these masses the tissue was shrunken and fibrous and dark grayish red in color. Microscopically there were found conditions entirely analogous to those described in the published case, i. e., in many areas the collapsed scarred framework of the liver with proliferating sprouts from the bile ducts; in other places the greatly enlarged liver lobules which had resulted from the hypertrophy of those lobules which remained uninjured.

The aim of this note is merely to show what must be almost obvious, that there may occur a scarred condition of the liver perhaps intermediate between the ordinary cirrhosis and the extraordinary distortion just described, a condition, in other words, in which some single attack of an infectious disease or some single intoxication has produced a single non-progressive, though widespread, injury from which complete and permanent recovery has occurred.

Such livers present, in general, a smooth, even surface, interrupted only by a network of fine linear grooves, which are also seen on section and which indicate the places where destruction of the liver cells took place. The remaining tissue in two cases which we have studied was composed of lobules perfectly normal in form, but rather larger than the normal. Microscopically, but little proliferative change in the bile ducts are to be observed, and it appeared, indeed, that in these cases but little definite scar tissue had appeared, the depressed lines being composed of atrophic and collapsed liver tissue in which the blood capillaries were separated by scale-like remains of liver cells only.

Similar conditions have been observed in a case of pernicious anemia and in a case of myelocytic leukemia in which the livers were found to present, evidently as the result of a single injury, ramifying bands and lines in which the epithelial cells had been destroyed so that the framework of the tissue had collapsed into a red, vascular, spongy substance, while the remaining uninjured liver tissue stood out prominently in the form of opaque, yellowish-gray masses, with normal or somewhat enlarged lobulations.

These are rather extreme cases, but there are many cases in which, although no symptoms referable to the liver were noted during life, the autopsy revealed a liver practically normal, except for the presence of irregular, fine lines of scar tissue throughout its substance. These are commonly recognized as cases of incipient cirrhosis, and, indeed, it can not be denied that they are cases of cirrhosis, but we have no evidence whatever that the condition is part of a progressive process. From the normal state of most of the liver tissue it seems far more probable that we are dealing, not with the beginning of an advancing cirrhosis of the liver, but rather with a finished or stationary condition which has existed unchanged, since the injuries to the liver produced in the course of an attack of some infectious disease in earlier life were permanently healed. In other words, the condition differs from ordinary cirrhosis merely in not being progressive and in representing only the scars of an old injury.

DISCUSSION.

Dr. W. Ophüls, San Francisco, believed with Dr. MacCallum that the importance of the regenerative and reparatory changes taking place in cirrhosis can not very well be exaggerated, but he would not go so far in giving the interstitial changes an entirely secondary position. His contention is based very largely on some experiments which he has been doing on chronic nephritis. For his experiments he used guinea-pigs and dogs, feeding them certain well-known poisonous substances which affect the kidneys, and the specimens show that, although there are degenerative changes with the interstitial processes which were observed, they are hardly marked enough to be regarded as primary, nor is there any direct local relation between the two, the degenerative changes being diffuse in character and the inflammatory changes being localized in certain parts. It is certainly true that in these chronic inflammations degenerative and reparatory changes in the epithelium play a very important rôle in the production of the anatomic picture.

Dr. Henry A. Christian, Boston, asked Dr. MacCallum what in these lesions he considered the possible determining feature of the attack on the periphery of the lobule in the light of the fact that most acute conditions attack the center of the lobule. Such, at least, had been the distribution of acute necroses in his cases. He also asked what Dr. MacCallum thought about the endothelial type of cell which appears, that is, the cell which morphologically resembles an endothelial cell; whether he regards such cells as true endothelial cells.

Dr. MacCallum said that he was convinced that the only instance of primary trouble is of the highly organized tissues. He can not make clear himself any constricting effect on the liver tissue. In regard to Dr. Christian's remarks, he thought that necrosis of the liver is different in arrangement at Baltimore from what it is in Boston. He has been struck by the relative rarity of the central lesions. As to Dr. Christian's second question, he does not regard these as endothelial cells or that they go to the formation of any blood vessels.

Dr. Henry A. Christian, Boston, agreed that what Dr. MacCallum said about the difference between Boston and Baltimore is true. This was brought out when Dr. Opie read his paper in Washington on "Zonal Necroses of the Liver." Dr. Christian said that he felt rather badly because he thought that this condition might have been overlooked in Boston, but he came back and went over something like 2,000 cases and found only central necroses. He can not explain why this difference exists. The types of cirrhosis in Baltimore and Boston are practically the same.

Electric Signal for Wet Diapers.—We learn from an exchange that the Exhibition of Hygiene recently held at Vienna contained a practical device, the invention of Professor Pfaundler, to aid in the care of infants. It is an electric contrivance with dry elements and a small wire pad. The latter is placed in the child's diaper. As soon as the diaper becomes wet the circuit is closed and an electric bell rings until dry conditions are restored.

---

[1] MacCallum: "Regenerative Changes in Cirrhosis of the Liver," The Journal A. M. A., Sept. 3, 1904.

[2] Johns Hopkins Hospital Reports, vol. x.

A PLEA FOR MORE RADICAL OPERATIONS IN CANCER OF THE LIPS AND TONGUE.*

D. N. EISENDRATH, M.D.
CHICAGO.

The decreased number of recurrences after a thorough removal of the breast according to the method of Halsted and others has taught us that the same principles could be applied in the surgical treatment of carcinomata elsewhere in the body. In no class of cases does this seem more promising than in carcinomata of the more superficial character like those of the face, tongue, lips, ear, etc.

MODE OF GROWTH OF SQUAMOUS-CELLED CARCINOMATA.

Carcinomata of the lips, tongue, ear, etc., all belong to the flat or squamous-celled type. They spread almost exclusively either by continuity of tissue or along the lymphatic spaces and vessels to the lymph nodes which normally drain the region involved. Metastatic growths in the internal viscera or long bones are very rare in the squamous-celled type of carcinoma.

von Winiwarter and Landau were unable to find internal metastases in a large number of cases examined by them. Küttner[1] found only four in which there were such deposits in a number of cases of cancer of the tongue reported from nine German university clinics.

These data confirm the frequently observed clinical fact that recurrence of carcinoma of the lips, tongue, etc., usually takes place close to the original seat of operation or in the adjacent lymph nodes. Such a local or regional recurrence usually manifests itself from one to three years after operation; but cases have been reported in which they did not appear for eight or ten years. The latter are a rare exception.

There are but few reliable statistics which will aid us in judging of the percentage of permanent recovery after the older and less radical operations for removal of the class of carcinomata of which this paper treats. The chief reason for this is the great difficulty in following the cases for a long period. Küttner was able to collect 162 cases from nine hospitals in which the nonradical operation had been performed for cancer of the tongue and found only 13 per cent. of permanent recoveries.

There is no form of carcinoma in which involvement of the lymph nodes draining the area involved takes place as early as in carcinoma of the tongue, lips, etc. It is for this reason that operations for the radical removal of all infected territory seem to offer such favorable opportunities for permanent cures.

LYMPH NODES WHICH DRAIN THE LIPS, TONGUE, FACE AND EARS.

These have been carefully investigated by Sappey, Küttner,[1] Polya,[2] Poirier[3] and others and can be best understood by a reference to Figures 1, 2 and 3. They are as follows:

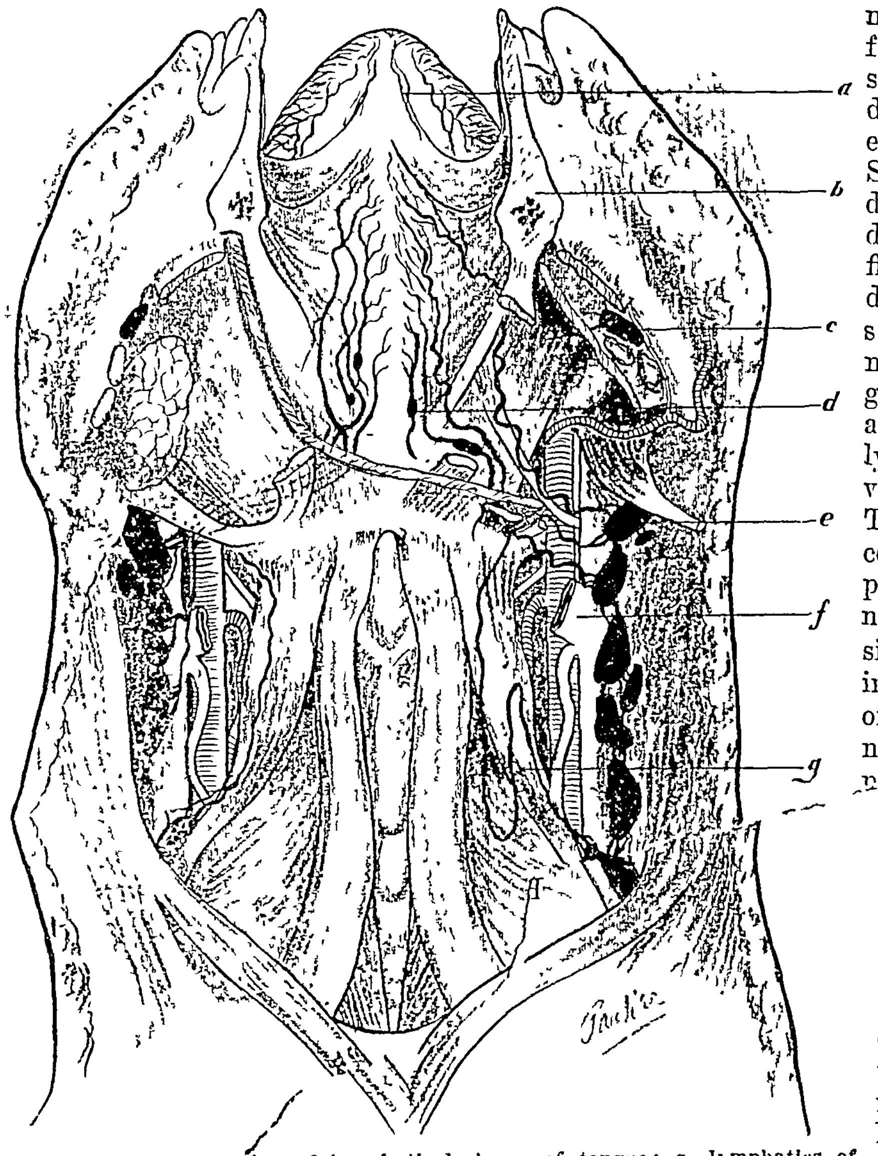


Fig. 1.—Anterior view of lymphatic drainage of tongue; *a*, lymphatics of sides of tongue and floor of mouth; *b*, cut surface of jaw divided in the median line; *c*, submaxillary lymph node; *d*, lymph nodes in geniohyoid muscle; *e*, deep cervical node along the internal jugular vein; *f*, internal jugular vein; *g*, omohyoid muscle.

1. For the Tongue (*Fig. 1*).—Submaxillary lymph nodes receive lymph from the edge, lower surface and middle of dorsum of tongue and entire floor of mouth. Superior and inferior deep cervical nodes drain entire tongue and floor of mouth. In addition to these there are some intramuscular nodes situated in the geniohyoid muscles, and at times retrograde lymph currents may involve the parotid nodes. There is much intercommunication of lymphatics so that a carcinoma involving only one side of the tongue may invade the lymph nodes of both sides of the neck. The most important node is situated at the bifurcation of the common carotid arteries. This node lies deep beneath the posterior belly of the digastric muscle. In order thoroughly to remove the deep nodes which drain the tongue, it is also necessary to excise the lower part of the parotid salivary gland.

2. For the Lips (*Fig. 2.*)—The chief lymph nodes which drain the lips are situated in the submental and submaxillary regions. Occasionally infection of one of the deep cervical nodes will take place at an early period. The submental lymph nodes draining the lips are situated just beneath the skin between the two anterior bellies of the digastric muscles. The submaxillary nodes lie embedded in the subcutaneous fat of this region in close relation to the capsule of the submaxillary salivary gland. They are at times found within the latter so that it is always safer to remove the submaxillary salivary gland itself.

---

*Read at the annual meeting of the Illinois State Medical Society, May 16, 1906.

[1] Küttner: Beitr. z. Klin. Chir., vol. xxi.

[2] Polya: Deutsch. Ztschr. f. Chir., vol. lxv.

[3] Poirier, Cuneo and Lamere: "The Lymphatics."

Involvement of the deep cervical nodes does not take place until a later period of the primary growth, but in a radical operation, even at an early stage, the possibility of their involvement must be borne in mind.

3. *For the Ear* (*Fig. 3*).—The lymph nodes draining the external ear are chiefly the deep cervical, although at times the parotid and mastoid nodes may be first affected.

4. *For the Nose, Face and Cheeks.*—The lymphatic drainage of the nose, face and cheeks is chiefly into the submental and submaxillary nodes and from these into the deep cervical at a comparatively late period of the development of the primary growth. The lymph from the lateral portion of the face drains into the parotid nodes situated on, within and beneath the capsule of the parotid salivary gland.

One can not in general rely on any one set of nodes being affected, but must remove all of them in order to be thorough. One should not depend on external palpation for enlarged lymph nodes before undertaking a radical operation. Such enlargement may be simply inflammatory or there may be a number of deep nodes which are not palpable.

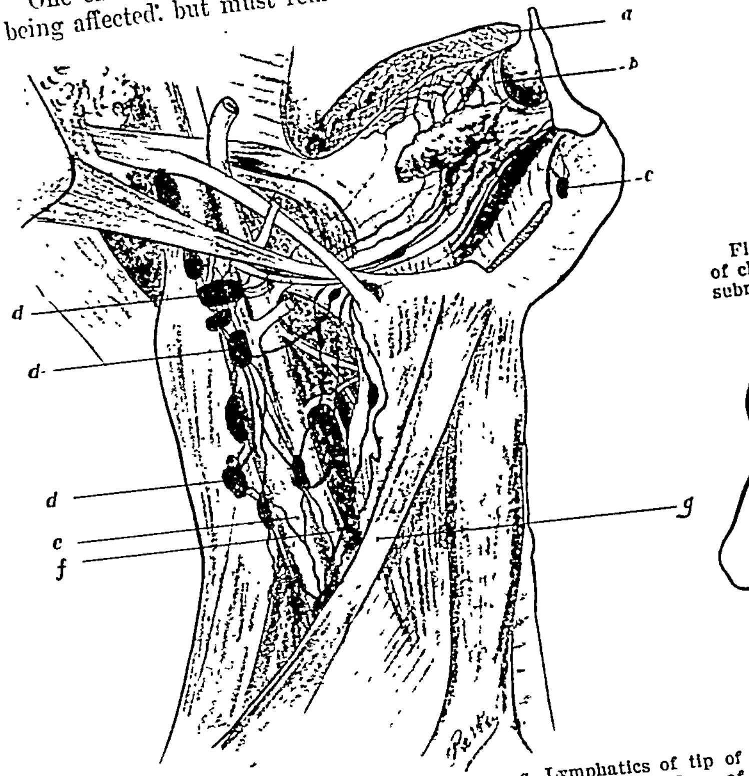


Fig. 2.—Lymph nodes draining tongue: *a*, Lymphatics of tip of the tongue; *b*, lymphatic trunks of sides of tongue and floor of mouth, draining into *c*, submaxillary and submental nodes, and into *d*, deep cervical nodes; *e*, internal jugular vein; *f*, common carotid artery; *g*, omohyoid muscle.

HISTORY OF OPERATION.

Before beginning the description of the methods I will refer briefly to the development of this tendency toward more radical operations in this class of carcinomata.

The majority of the articles have appeared during the past eight years. The first surgeon to advocate thorough removal of all lymphatic nodes was Butlin.[4] In a paper published in 1898, he stated that he had employed the method since 1895, in a more or less systematic manner, for cancer of the tongue. Since 1898 a number of articles have appeared advocating the same procedure for cancer of the tongue, lips, etc. Among these may be mentioned those of Crile, Küttner,[1] Polya,[2] Stewart,[5] Cheyne,[6] Stieda,[7] Ebel,[8] Boyd and Unwin[9] and Whitehead.[10]

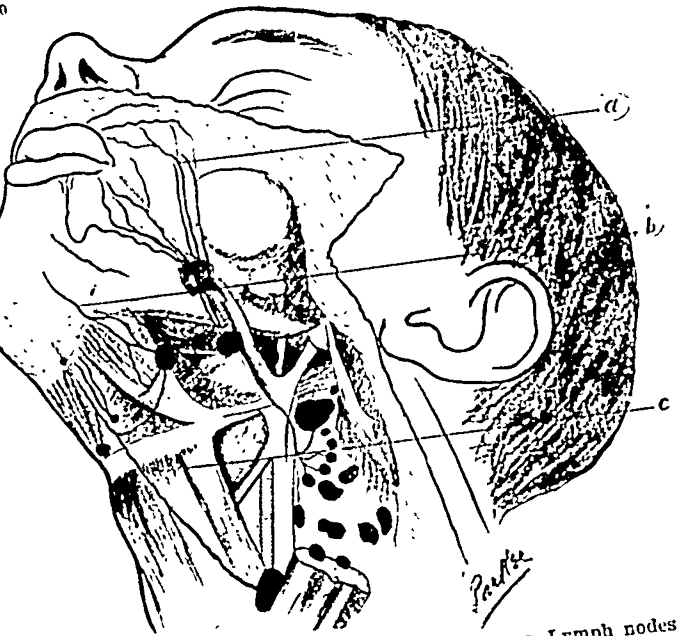


Fig. 3.—Lymph nodes draining cheeks and lips: *a*, Lymph nodes of cheek; *b*, lymph nodes of lower lip and chin region draining into submaxillary and submental glands; *c*, deep cervical nodes.

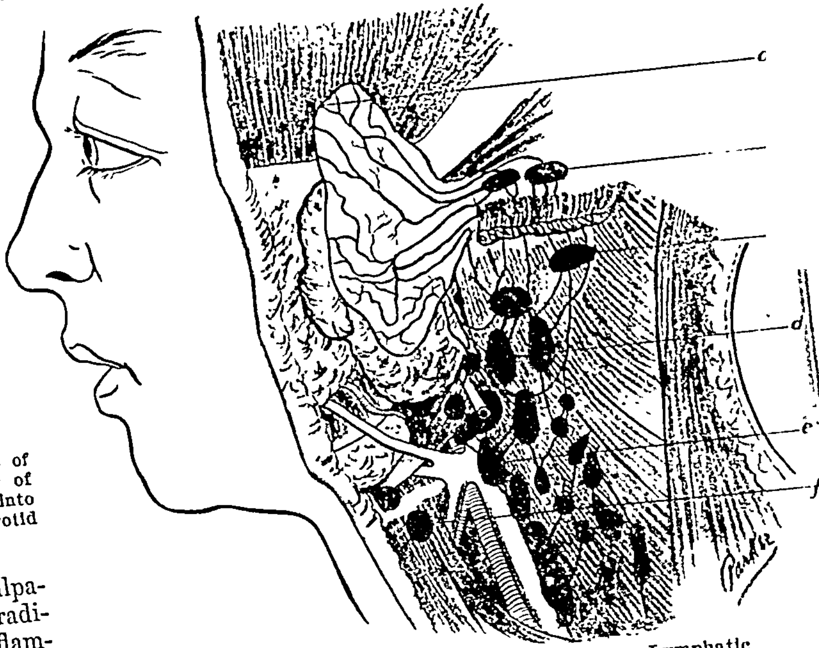


Fig. 4.—Lymph nodes draining ear (Poirier); *a*, Lymphatic trunks of auricle; *b*, mastoid, *c*, *d*, *e*, and *f*, deep cervical nodes.

Unfortunately there are but few statistics up to the present time which will enable one to form an opinion as to what extent these more radical operations have lessened the percentage of recurrence. As in the case of the development of the same mode of operation in cancers of the breast, it will be necessary to collect a large number of cases and await a considerable time after operation before we can judge of the value of the same principle as applied to cancers of the lips, tongue, etc. It would seem as though a period of at least three years should elapse before results could be fairly judged.

---

[4] Butlin: Brit. Med. Jour., vol. i, 1898, and vol. i, 1905.

[5] J. C. Stewart: St. Paul Med. Jour., vol. vi, 1904.
[6] Cheyne: Practitioner, April, 1899.
[7] Stieda: Archiv. f. Klin. Chir., vol. lxiii.
[8] Ebel: Beitr. z. Klin. Chir., vol. xl.
[9] Boyd and Unwin: Practitioner, May, 1903.
[10] Whitehead, W.: Practitioner, May, 1903.

Butlin[4] began to perform the operation for the complete removal of the contents of the anterior triangle of the neck in December, 1895, or January, 1896. Between that period and December, 1901, there were 28 of these operations, and, in a paper published in 1905, he says: "I will merely take the number of persons who died of affection of the gland without recurrence in the mouth and the number of successful cases, that is, of persons who were alive and well three or more years after the operation, or who died of some other disease than cancer more than three years after the operation. There were 28 cases of removal of the contents of the anterior triangle of the neck from January, 1896, to December, 1901; 4 patients died of affection of glands without recurrence in the mouth; successful cases, 10.

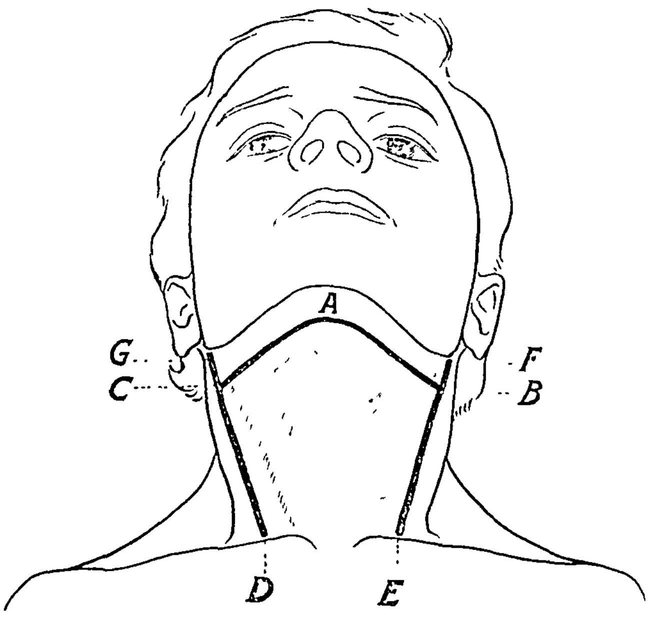


Fig. 5.—Incision employed in extirpation of lymph nodes in carcinoma of the lips, tongue, etc. C, A, B, transverse incision parallel to lower border of lower jaw, and midway between upper border of thyroid and lower jaw for extirpation of submaxillary and submental glands; G, C, D and F, B, E, incisions over middle of sternocleidomastoid muscles to permit extirpation of deep cervical nodes, with or without the removal of the sternocleidomastoid and internal jugular vein. The nodes in the supraclavicular region may be removed by an incision parallel to the upper border of the clavicle, carried outwards from D or E respectively.

Compare with these the results of the old operation, in which the glands which could be felt to be enlarged were taken out, but no more than this was done. Up to January, 1896, I performed this operation 31 times. Of these 31 cases of removal of enlarged glands before January, 1896, 8 *patients died of affection of glands* without recurrence in the mouth; successful cases, 5.

Again, take another series of cases to compare with the first series. Between January, 1896, and December, 1901, Butlin operated on 34 patients for the removal of cancer of the tongue without removal of the glands of the neck. Of these 34 cases 9 patients died of affection of the glands *without recurrence in the mouth; successful* ones, 9."

It will be seen at a glance that by far the most successful results are those which were procured by the removal of the contents of the anterior triangle. But the mere statement of numbers does not tell anything. Allowance has been made for certain conditions which were present or which were absent in each of these three series of cases. In the first series of cases, there were 18 patients in whom the glands were perceptible to touch at the time they were removed, 7 in whom they were not perceptible, and 3 of whom there was no note on this important point. By far the best results were obtained in the 7 cases in which the glands were not perceptible to touch. For 4 of these patients are among the 10 successful cases. Of course, *in the second series the glands were* perceptible in every one of the 31 patients, and that was why they were removed. So far from thinking the results bad, he was surprised to find they were so good. For it is a remarkable circumstance that five persons, under such conditions, should have been cured by so incomplete an operation. In more than 1 of these 5 cases the glands were proved *by microscopic examination to* contain epithelioma. Yet one of these patients was alive and well nearly twenty years after the operation.

Probably no corrections are required in the third series of 34 cases. For if, on the one hand, it may be said that these 34 cases comprise the lightest and most favorable of all the cases (which is, of course, true), *there were, on the other hand, some of them in which* the glands were not removed, because they were beyond reach of removal, and the operation on the tongue was merely palliative.

In 1903 I began to employ the radical removal of the lymphatic nodes and surrounding tissues in the submaxillary triangle and along the internal jugular vein *as a routine procedure in cancer of the lips, tongue, ear* and face. The number of cases is still too small and the time which has elapsed too short to render a publication of results advisable at the present time, so that the present article is intended more as a preliminary communication to call the attention of the profession to a much-needed change in our surgical treatment of these more superficially situated carcinomata.

The method employed at the present time by the majority of surgeons varies chiefly, *a*, as to the incision; *b*, as to the amount of tissue to be removed; *c*, as to whether the operation shall be performed at one or two sittings. It is necessary to divide the cases into two classes: first, those in which the case is seen by the surgeon at a *comparatively early stage* of the lymph node involvement; second, those seen at a later period when the secondary growths are very extensive. For the former the first method of operation to be described is to be employed; for the more advanced cases *the methods* recommended by Crile, Butlin[4] and others are to be used.

TECHNIC FOR LESS ADVANCED CASES.

1. *Removal of Primary Growth.*—In cancers of the lips and tongue the amount to be removed varies, of course, with the extent of the lesion. As a general rule, one should never be content with excising at least a half inch of healthy tissue on each side of the growth. In cancer of the tongue which extends beyond the median line, it is better to remove the entire organ, since the lymphatics of both sides of the neck are probably involved. Whether the tongue shall be removed, *a*, through the mouth after the method of Whitehead; or, *b*, through an incision parallel to the lower jaw, i. e., from below, combined with temporary resection of the jaw, is a matter of individual preference. The majority of surgeons both in this country and abroad prefer the Kocher

method, i. e., from below the jaw. It can be readily combined with radical removal of infected lymphatic tissue, or combined with ligation of the external carotid artery to be referred to below.

Temporary resection of the lower jaw in the median line after the method of Langenbeck adds greatly to the exposure of the operative field.

2. Removal of Infected Lymphatic Nodes.—In the majority of cases cancer of the lips, tongue, ear, face and cheek, the incisions shown in Figures 5 and 7 will suffice. I have used them since 1903 and they give excellent access to every part of the neck. In cases of cancer of the lips only the first portion need be employed; viz., C, A, B (Fig. 5). This consists of an incision through the skin and subcutaneous fat extending parallel to the lower jaw and midway between the lower border of the latter and the upper border of the thyroid cartilage from the sternocleidomastoid muscle on one side of the neck to the same structure on the opposite side.

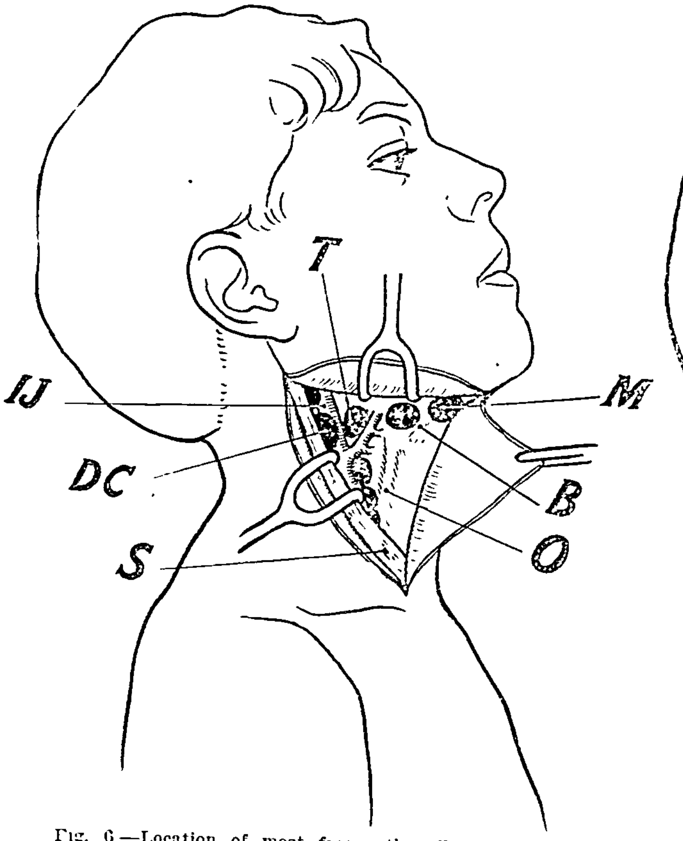


Fig. 6—Location of most frequently affected lymph nodes in carcinoma of the tongue: M, submaxillary nodes; T, deep cervical node lying between internal and anterior jugular veins; D, C, deep cervical nodes lying in front and behind internal jugular vein; S, sternocleidomastoid muscle, retracted so as to show the deep cervical nodes in the upper half of the neck; I, J, internal jugular vein; O, omohyoid muscle; B, anterior belly of digastric.

The flaps are retracted and all of the following tissues removed in submental region and the submaxillary triangles on both sides of the neck: subcutaneous fat, submaxillary and submental lymph nodes, submaxillary salivary glands and all veins, large or small.

In cases of cancer of the tongue the removal of lymphatic nodes, etc., should not only include the contents of the submaxillary region, but the additional incisions (G,C,D and F,B,E), shown in Figures 5, 6, and 7 should be made. These permit free exposure of the lymph nodes lying along the internal and anterior jugular veins beneath the sternocleidomastoid muscles on both sides of the neck and many lymph nodes between the sternocleidomastoid muscle and the muscles of the larynx and at the bifurcation of the common carotid.

If the sternomastoid or the omohyoid be involved, they should be removed, since their extirpation does not interfere greatly with the movements of the head. Similarly if the nodes are adherent to the internal jugular it is best to resect a portion of this vessel. No operation should be considered complete without a thorough removal (through the incisions made over the middle of the sternocleidomastoid muscle) of the deep cervical nodes along the internal jugular. The exposure of the supraclavicular fossæ on each side through an incision parallel to the upper portion of the clavicle (Fig. 6) permits an inspection of the lymphatics in this region and removal of the abundant fatty tissue and infected lymphatics. In cases of cancer of the tongue there are two other places in which search should always be made for infected lymph nodes. These are on and within the parotid capsule.

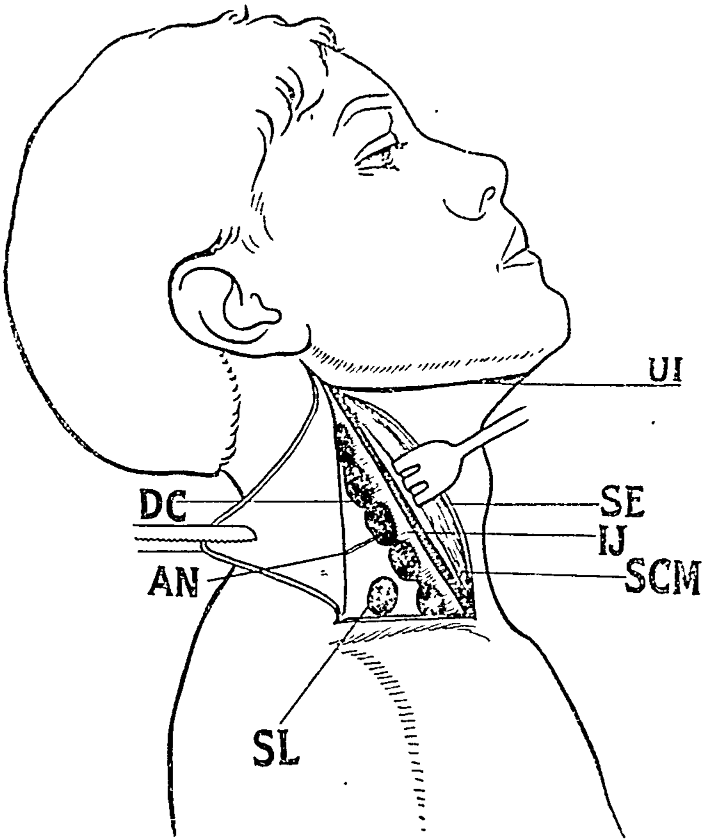


Fig. 7.—Method of removing lymph nodes in posterior triangle of neck, and those adherent to posterior aspect of internal jugular vein without resection of the sternocleidomastoid muscle: U, I, incision through which the submaxillary and submental glands have been removed; S, E, skin edge; I, J, internal jugular vein; S, C, M, sternocleidomastoid muscle pulled forward; S, L, supraclavicular nodes; A, N, spinal accessory nerve; D, C, deep cervical of internal jugular nodes.

3. Hemostasis.—Hemostasis in operations for extirpation of cancer of the lips and of the lymphatic nodes in the submaxillary region is a much simpler problem than in the case of an operation for cancer of the tongue. In the latter the question depends again on whether the organ is removed through the mouth or from below by Kocher's method. In the latter case the incisions described above for the removal of lymphatics greatly facilitate the ligation of the lingual or even of the external carotid arteries. There is, of course, some danger of cerebral embolism following the ligation of the external or common carotid. Mortality from this cause is estimated by Crile usually at from 1 to 2 per cent., but at the time of life at which cancer is likely to develop the danger of embolism from this cause increases to from 20 to 30 per cent. A ligation of the lingual arteries through the neck incision before removing the tongue is especially to be recommended as greatly decreasing the amount of hemorrhage and not being followed by embolism. In general it may be said that every vessel should be caught with artery forceps and ligated lest they reopen after the clots become dislodged.

Every precaution should be taken to avoid infecting the field of operation either from the primary growth or through careless removal of carcinomatous lymph nodes. The primary focus should be cauterized, if possible, and great care taken not to open the lymph nodes during their removal.

4. Mode of Anesthesia, Posture, Etc.—The mode of anesthesia varies according to whether or not a preliminary tracheotomy has been performed. If the latter has been done, the anesthetic is given through the canula in the trachea. If no tracheotomy has been performed one can use the method of Crile, viz., inserting a rubber tube through each nostril extending to the level of the epiglottis, or the anesthetic can be administered through the nostrils after being poured on a sponge or pumped through a rubber tube inserted just beyond the external nares with the aid of the modified Brophy apparatus. Chloroform should be given preference on account of the greatly increased amount of salivary secretion after the use of ether. The hypodermic administration of ¼ gr. morphin 15 minutes before beginning the operation greatly decreases the amount of anesthetic used.

The best position for thorough removal of the tongue with removal of the lymphatics is with a sand bag under the shoulders and the head thrown well back. Whitehead prefers a sitting posture. In operation on the lips the primary growth can be excised with the head elevated, and then the latter can be lowered to permit removal of the lymph nodes.

TECHNIC IN ADVANCED CASES.

This has been so well described by Crile in a number of recent articles that it will be necessary to refer only briefly to it here.

In these advanced cases Crile closes the common carotids temporarily by means of a clamp and then proceeds to remove from below upward all of the soft tissues, including the lymph nodes themselves, the sternocleidomastoid muscles, the internal jugular vein, fat, etc. It is remarkable how little general or local disturbance such radical procedures cause. Whitehead mentions having excised portions of the common carotids in two cases.

SHALL THE OPERATION BE PERFORMED IN ONE OR TWO SITTINGS?

The question arises in these radical operations whether both the primary growth and the lymphatics shall be removed at one sitting. The answer is that it depends. *a*, on the general condition of the patient; *b*, on the extent of involvement; *c*, on the skill and experience of the operator in this class of cases.

In cancer of the lips both operations can usually be performed at one sitting. In cancer of the tongue there should be only one sitting unless the patient's condition is such as to permit of an operation requiring in the most experienced hands from 1 to 1½ hours. The shock from these operations is, as a rule, very slight, so that, if possible, both had better be performed at the same time.

Boyd and Unwin[9] have called attention to a very important fact, viz., that if the tongue growth is removed *at the first sitting* and then the lymphatics taken out 1 to 2 weeks later an increased lymph stream follows and the tumor cells are more widely diffused. They advise, if the operation is to be performed in two steps, to remove the glands first and the tongue a week later.

It may be said in general that, with the exception of very old or weak patients, there are many advantages in performing both operations at one sitting, especially if the Kocher method of removing the tongue be employed. Butlin[4] performs the operation on the tongue first. The removal of lymphatics is done as soon as the patient is able to take food by mouth, i. e., liquid food enough to enable him to fight through the second operation.

My own method has been to perform both operations for cancer of the lips, face and ears at the same sitting. In cancer of the tongue I have carried out both at the same sitting in fairly robust patients without much glandular involvement. If the latter is extensive it is better to follow the plan of Butlin just mentioned.

103 State Street.

THE RADICAL CURE OF ANEURISM.

PRESENT STATUS OF THE METHOD OF INTRASACCULAR SUTURE, OR ENDOANEURISMORRHAPHY.*

RUDOLPH MATAS, M.D.
Professor of Surgery, Medical Department Tulane University, Louisiana.
NEW ORLEANS.

SYNOPSIS.

The term, endoaneurismorraphy, meaning the closure of an aneurismal orifice connecting the trunk of an artery with the aneurismal sac by suturing the orifice from *within* the sac and the obliteration of the sac by suture, I introduced in 1902, in a paper read before the American Surgical Association at its meeting in Albany, to describe an operation which it was my fortune to apply for the first time at the Charity Hospital of New Orleans while attempting the extirpation of a traumatic brachial aneurism in a negro, March 30, 1888, eighteen years ago. It was after the failure to cure this traumatic aneurism by the application of a proximal and distal ligature of the brachial artery that I attempted the extirpation of the sac; but the extirpation had to be abandoned because of the danger of injuring the median and ulnar nerves which were incorporated in the walls of the sac. The persistence of bleeding, after the removal of the tourniquet, from numerous collaterals which opened into the main trunk at each end of the sac, compelled me to adopt the suture with needle and silk to occlude the bleeding orifices. This simple expedient, suggested by the urgent hemostatic necessities of the case, appeared to be so easy and satisfactory that it seemed to me that any surgeon similarly situated, would have instinctively adopted this way of extricating himself from what would otherwise have been a difficult situation.

The detailed report of this case[1] attracted no notice, and it was not until after my report[2] of four additional cases of aneurism treated by this method, in which the technic of the operation, as a systematic procedure, was fully described, that the value of the suture, methodically applied to the cure of aneurism, began to be realized, and the interest of other operators roused in the subject.

---

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Medical News, Philadelphia, Oct. 27, 1888.

From June, 1902, the date of my first communication, to April, 1905, when the status of the operation was summarized,[3] I was able to present the reports of fifteen operations for aneurism performed by thirteen different operators who had adopted the method I had described. These fifteen cases, with my original five personal operations, summed up a total of twenty aneurisms treated by the method of intrasaccular suture up to April, 1905. In my second report[4] I was able to add ten more cases, from various sources, to the list, thus making a total of thirty, reported up to January, 1906.

I am now able to add six more operations to the record, four of which are of American origin and two foreign (Le Fort and Del Conte), which can not be recognized as typical procedures, such as I have described for this operation, though they are instances of the suture as applied to the closure of arterial orifices in aneurisms.

Very recently, I have learned through the program of the International Medical Congress, held in Lisbon, March, 1906, that Prof. R. Lozano, of Saragossa, Spain, has adopted my suggestions and operated on four aneurisms by arteriorrhaphy, including in this an abdominal aortic aneurism, one subclavian and two popliteals. This would swell the list of aneurisms treated by the method of suture to forty, including in this thirty-four cases reported by American operators who have adopted the procedure which I originally suggested, and six others reported by three foreign surgeons, two of whom have operated on two patients, by methods of their own, in which, however, the essential principle of suture is recognized.

With a list of thirty-four American cases thus far reported, which may later on be increased to forty when the details of these foreign cases are better known, we will soon be in a position to institute a fair comparison with other surgical methods of treating aneurisms, notably with (1) the ligature, (2) the method of Antyllus, (3) the method of Purmann, or Phylagrius, and (4) the more recent modification of the old operation suggested by the late lamented von Mikulicz.

The mere summary of the facts already gathered from the thirty-four American cases thus far reported is, I believe, sufficiently demonstrative to prove that the new method of intrasaccular suture has not only stood the test of experience, but that in all suitable cases it will accomplish, with greater certainty and simplicity, all that the older classical methods just referred to, have done and can do, for the cure of all aneurisms that are amenable to direct surgical intervention.

Before submitting a brief analysis of the reported cases I deem it necessary to explain, for the benefit of those who have not had access to my previous writings, what I mean by the cure of aneurism by the method of suture, or endoaneurismorrhaphy.

I will have to repeat here what I have recently had to state elsewhere, that "In spite of my efforts to elucidate the essential principles of the operation, and to simplify the *modus operandi*, a great deal of confusion and misapprehension still exists in the minds of many practitioners and surgeons who, having obtained their information from abstracts and second-hand descriptions given in journals and even text-books, regard it as a difficult and complicated procedure, necessarily restricted to a small group of cases which I have described as suitable for arterioplasty," or, as I shall classify them in this article, under the head of "reconstructive endoaneurismorrhaphy."

It is evident that the ideas entertained abroad on this subject are very confused. Höpfner,[5] in his notable article of 1903, classified my cases with a group of normal arteriorrhaphies, and the latest German writer on aneurism, Otto von Frisch,[6] of von Bergmann's clinic, indulges in commentaries and criticisms of an operation which he evidently does not understand, and about which he has certainly not been correctly informed. Del Conte, of Naples, in dealing with this subject, also labors under a serious misapprehension as to the essential features of the operation. The idea that prevails abroad is that the operation which Bullock, of Lexington, Ky., first associated with my name, is essentially the "formation of a new artery from an aneurismal sac by suturing, after laying open the aneurism and turning out the clot." This is not at all surprising when we consider that this idea largely prevails in this country and that the few foreigners who have paid any attention to this subject have formed their conception of the procedure on the current interpretation given of it in our own periodical literature.

Such misconceptions of the method of intrasaccular suture, demand rectification in order that the operation may not be divested of its chief merit, as a simple and thoroughly practical measure applicable to the vast majority of cases in which the ligature and methods of incision and extirpation are still currently applied, as preferred methods. The errors that I wish to correct more especially are: (1) the belief that this method of intrasaccular suture is a technically difficult procedure; (2) that arterioplasty, or the reconstruction of an artery out of the sac walls (reconstructive endoaneurismorrhaphy) is the essential and necessary feature of the operation, whereas, in reality it is only a secondary variation or development of the fundamental procedure, shortly to be described, and is applicable only to a limited number of fusiform aneurisms. In fact it is a question, which we are now trying to answer, in what particular class of aneurisms arterioplasty is necessary or especially indicated. The bolder, more aggressive idea, that of arterioplasty, has clung tenaciously to the minds of superficial readers and reviewers, and the less striking but more generally applicable arteriorrhaphy as applied to fusiform and sacciform aneurisms, has been overlooked and ignored. It should be especially remembered that the general utility of the intrasaccular suture method, as I have understood it, depends on the ease and certainty with which the aneurismal orifices can be sutured and closed without interfering with the collateral circulation, much more than on the principle of reconstructing an artery.[7]

---

[2] Annals of Surgery, February, 1903.

[3] Address before the Alabama State Medical Society on "The Suture in the Surgery of the Vascular System," April, 1905.

[4] Transactions of American Surgical Association, 1905.

[5] Archiv. f. Klin. Chirurg., vol. 70, p. 430.

[6] Langenbeck's Archiv., vol. lxxix, 1906.

[7] In 1902, when my experience was limited to four personal observations, I felt that there were probably numerous cases of aneurism of the lower extremities, with edematous, cyanotic and choked limbs, in which the reconstruction of the lost artery would be necessary for the preservation of the limb. Subsequent experience with nineteen popliteal and eleven femoral aneurisms in which obliterative aneurismorrhaphy has been performed in the majority of cases, has convinced me that the cases of aneurism which demand the reconstruction of the blood vessels must be few indeed, and that the obliterative and restorative modes of intrasaccular suture, by preserving the collateral circulation undisturbed, are capable of meeting safely and efficiently all the exigencies of the situation.

I therefore submit my definition of endoaneurismorrhaphy and the operations that are derived from it.

SYNONYMS AND DEFINITIONS.

Endoaneurismorrhaphy.—The "Matas operation" (Bullock); "the radical operation for the cure of aneurism by the intrasaccular suture of the aneurismal orifices," essentially consists of two fundamental procedures: (1) the obliteration, by suture, of the vascular orifices which open into the aneurismal sac; (2) the obliteration of the sac by suture which brings its inner surfaces in apposition, or by methods of obliteration which leave the sac undisturbed and tend to secure primary healing by plastic union. In obliterating the vascular orifices that supply the sac, the parent trunk which nourishes the aneurism may be preserved or obliterated at the point of attachment according to the type of sac encountered. Hence the subdivision of endoaneurismorrhaphy into three varieties:

1.—*Obliterative endoaneurismorrhaphy* (the fundamental procedure), essentially consists in opening the sac freely without disturbing it from its surroundings and closing all visible arterial orifices within the sac, by suture, thus securing complete hemostasis and permanently stopping all further access of blood into the aneurismal cavity. The sac is obliterated by approximating its walls with buried sutures, and closing the wound with or without drainage; or, in rigid cavities, by simply infolding the overlying skin flaps and lining the cavity with them (*capitonnage* of the French) or by one of the several procedures or variations I have suggested.

The indications for the application of this obliterative suture, or fundamental procedure, are: All aneurisms in which the sac is of the fusiform type, in which there are two or more orifices of supply and in which the parent artery is entirely lost at the seat of the aneurism by blending with the aneurismal sac throughout its circumference. In these cases no attempt is made to restore the continuity of the parent artery; the blood stream is interrupted in that part of the vessel which directly opens into the sac and the arterial orifices are simply closed by suture, thus shutting off the sac from all sources of blood supply.

Up to the present time twenty-two cases illustrating this mode of procedure (obliterative endoaneurismorrhaphy) are exhibited in the group of thirty-four aneurisms contributed by American operators. Possibly several of the foreign cases are of this type, but as the contribution of Dr. Lozano has not yet appeared, we are not yet in a position to state the type of cases included in his report.

2.—*Restorative endoaneurismorrhaphy.* This variation in the procedure is solely applicable to aneurisms of the sacciform type, in which the parent trunk retains its continuity and normal outline, and the aneurism is a sac simply grafted on the vessel. By opening the sac freely and washing out the clot, the opening leading to the artery is exposed inside of the aneurism and is readily closed by a continued suture which penetrates through all the coats of the sac at the margin of the orifice of communication. By this procedure the blood supply of the sac is permanently arrested, the lumen of the parent artery remains patulous and the arterial stream supplying the limb, or dependent territory, is immediately restored through its normal channel. The sac is then obliterated by bringing its endothelial surfaces together with buried sutures and the surface wound is closed in the usual manner. Up to the present time seven operations of this type have been reported by American surgeons, all successful, and two, at least, of the foreign cases may be appropriately added to this list, making nine in all.

3.—*Reconstructive endoaneurismorrhaphy* (arterioplasty) is applicable solely to fusiform aneurisms in which the coats of the sac are firm, elastic and resistant and the two openings leading to the main artery lie on the same level, in close proximity, and are situated at the bottom of a superficial or readily accessible sac.

In aneurisms of this type, especially those of traumatic origin, the continuity of the parent artery may be restored by making a new channel out of the sac walls which can be brought together by suture over a guide (catheter or drainage tube) inserted into the proximal and distal openings of the aneurism. Before tying the last sutures, the guide is removed and the channel is left behind corresponding to the outline of the original artery. The sac is then obliterated by approximating its surfaces with buried catgut suture, as previously applied in the first and second procedures. Thus far, five cases of this operation have been reported, all by American surgeons. Two of these patients have relapsed. The first, Morris' case, was followed in six months by an amputation of the thigh, though it is recognized that a secondary operation by the obliterative method would have obviated the necessity for this sacrifice. In the second case (Danna's) when relapse occurred the sac was reopened, the obliterative method was applied with permanent and perfect success. The surgeons in the other cases (Craig Barrow of Savannah, 2; Van Lennep of Philadelphia, 1) report that their patients continue to do well, and, thus far, without relapse.[8]

SUMMARY.

Total, 34 cases of aneurisms of different types, reported by 21 American operators:

I. GEOGRAPHICAL DISTRIBUTION.

NEW ORLEANS: R. Matas, 5; J. A. Danna, 4; H. B. Gessner, 1; F. W. Parham, 1; F. W. Parham and E. D. Martin, 1; S. W. Stafford, 2; W. Kohlman and J. Newman, 1; total, 15.

NEW YORK: Robert Morris, 1; Willy Meyer, 1; Robert I. Abbe, 2; F. H. Markoe, 1; total, 5.

LEXINGTON, KY: W. O. Bullock, Jr., 4.

SAVANNAH, GA.: Craig Barrow, 2; George H. White, 2; total, 4.

PHILADELPHIA: J. H. Gibbon, 1; Chas. H. Frazier, 1; W. B. Van Lennep, 1; total, 3.

KANSAS CITY, MO.: J. F. Binnie, 1.

INDIANAPOLIS: H. O. Pantzer, 1.

PUGET SOUND, WASH.: D. N. Carpenter, U.S.N., 1.

FOREIGN (classed as atypical): Le Fort (Lille), 1 (popliteal);[9] G. del Conte (Naples), 1 femoral (sacciform); R. Lozano, Saragossa, 4 (abdominal aorta, 1; subclavian, 1; popliteal, 2).

II. ANATOMIC DISTRIBUTION.

POPLITEAL, 19 (55 per cent.): Matas, 2; Bullock, 2; Robert Morris, 1; J. H. Binnie, 1; Craig Barrow, 1; H. O. Pantzer, 1; H. B. Gessner, 1; J. H. Gibbon, 1; J. A. Danna, 2; Willy Meyer, 1; F. W. Parham, 1; Robert Abbe, 1; F. H. Markoe, 1; S. E. Stafford, 1; Charles H. Frazier, 1; W. E. Van Lennep, 1.

FEMORAL, 11: Matas, 1; Bullock, 2; Danna, 2; G. R., White, 2; D. N. Carpenter, 1; Stafford, 1; Kohlman and Newman, 1; Craig Barrow, 1.

GLUTEAL: Robert Abbe, 1.

BRACHIAL: Matas, 2.

SUBCLAVIAN: Martin and Parham, 1.

III. SEX.

American Cases: Males, 32; Females, 2. Foreign: Female, 1 (del Conte); male, 1 (Le Fort).

Ages in 34 American cases: Youngest, 12 years; oldest, 65 years; majority between 30 and 60 years.

IV. ETIOLOGIC CLASSIFICATION.

TRAUMATIC, 8: Matas, 2; Pantzer, 1; G. H. White, 2; W. Meyer, 1; Markoe, 1; Bullock's fourth case, 1.

TRAUMATO-PATHOLOGIC, 14: Matas, 2; Bullock, 2; Gibbon, 1; Danna, 3; Parham, 1; Abbe, 2; Carpenter, 1; Martin and Parham, 1; Van Lennep, 1.

Cases classed in this group give a distinct history of some indirect traumatism (strain, lifting, indirect falls, etc.) associated with a pathologic arterial basis (syphilitic, alcoholic, arteriosclerotic).

---

[8] Craig Barrow's first case was operated on May 28, 1904; his second case, April, 1906; Van Lennep's, Jan. 17, 1906.

[9] The popliteal was extirpated after development of another aneurism in a different part of the artery.

Pathologic, 12: Matas, 1; Morris, 1; Binnie, 1; Barrow, 2; Gessner, 1; Bullock, 1; Danna, 1; Stafford, 2; Kohlman and Newman, 1; Frazier (?).

In accordance with accepted teaching, it is more than probable that the cases grouped as "pathologic" should be classed as "traumatopathologic," as there is always some direct or indirect traumatism which determines the localization of aneurisms in conditions of general arterial disease. The distinction of "pathologic" is made in the absence of a clear, recognized, local determining cause. This distinction is useful probably in accentuating the preponderance of the pathologic over the traumatic element in the causation.

V. TYPE OF ANEURISMAL SAC.

Fusiform, 23: Matas, 4; Bullock, 4; Morris, 1; Barrow, 2; Gessner, 1; Danna, 4; Gibbon, 1; Parham, 1; Parham and Martin, 1; Carpenter, 1; Stafford, 2; Van Lennep, 1 (nearly 64 per cent.).

Sacciform, 11: Matas, 1; Binnie, 1; Pantzer, 1; White, 2; W. Meyer, 1; Abbe, 2; Markoe, 1; Frazier, 1; Kohlman and Newman, 1. Foreign, 2; (2 sacciform Le Fort and del Conte).

VI. PROCEDURE ADOPTED.

1. Obliterative Endoaneurismorrhaphy: (Applied to fusiform aneurisms) 22 out of 34 American cases: Matas, 5; Bullock, 4; Binnie, 1; Gessner, 1; Danna, 3; Gibbon, 1; Parham, 1; Abbe, 2; Stafford, 2; Martin and Parham, 1; Carpenter, 1.
2. Restorative Endoaneurismorrhaphy: (All sacciform aneurisms) 7 cases: Lumen of parent vessel restored. Pantzer, 1; White, 2; Meyer, 1; Markoe, 1; Frazier, 1; Kohlman and Newman, 1.
3. Reconstructive Endoaneurismorrhaphy (Arterioplasty), applied to fusiform aneurisms, 5 cases: R. Morris, 1; Craig Barrow, 2; J. A. Danna, 1; Van Lennep, 1.

VII. TREATMENT OF SAC.

A—Typical obliteration of the sac without drainage, according to the author's first method. Total, 10 cases: Matas, 3; Bullock, 4; Craig Barrow, 2; G. H. White, 1.

B—Atypical obliteration of the sac, without infolding skin flaps, (buried sac method): Morris, 1. Binnie, 1; Pantzer, 1; Gibbon, 1; Meyer, 1; Parham, 1; Abbe, 2; Markoe, 1; Stafford, 1; R. H. White, 1; Kohlman-Newman, 1; Frazier, 1.

C—Atypical partial obliteration of the sac by approximating walls and surrounding parts, packing and draining: Matas, 2; Danna, 4; Gessner, 1; Carpenter, 1; Stafford, 1; Martin and Parham, 1; Van Lennep, 1.

VIII. POSTOPERATIVE RESULTS.

(a) Deaths: None directly attributable to the operation. (1) One patient (Pantzer's) died fifteen days after operation from associated pyelitis and nephritic coma while the healing of the wound was progressing satisfactorily. (2) Another patient (Stafford's No. 2), a negro, aged 59, died seventy days after the obliteration of a femoral aneurism by suture. This patient was the victim of the aneurismal diathesis. The first aneurism developed in the right popliteal and was extirpated after it had ruptured, Oct. 6, 1905. While the patient was slowly recovering from an infective synovitis of the knee following the operation, he developed a second aneurism in the upper left femoral, which grew rapidly and was obliterated by intrasaccular suture on March 30, 1906. Twenty days after the last operation, and while the wound was healing satisfactorily, the artery above the obliterated aneurism dilated and ruptured at a point where a traction loop had been applied, during the operation, for hemostatic purposes. The dilatation of the artery and rupture coincided with a violent acute edema of both lungs, caused, perhaps, by pulmonary thrombus or infarct. Great cyanosis, temperature 104 F., and intense dyspnea characterized this attack, which subsided after thirty-six hours, leaving the patient in great prostration. At this juncture the artery ruptured and a profuse hemorrhage with enormous hematoma occurred. The femoral was ligated above the seat of rupture a little below Poupart's ligament. Infection and suppuration occurred, followed by gangrene of foot. Six days after this ligation (April 26) secondary hemorrhage occurred at the seat of the ligature, necessitating the ligation of the external iliac above Poupart's ligament. The gangrene of the limb was marked. May 25, 1906, amputation at middle of thigh. Bed sores developed and the patient sank exhausted and marasmic, June 6, 1906.

While these events were taking place it was noticed that the right common femoral and abdominal aorta were undergoing dilatation, which would have developed into aneurisms had the patient survived. It is to be noticed that the circulation of the limb was perfect after the obliteration of the left femoral aneurism by endoaneurismorrhaphy, and that gangrene of the foot and leg did not occur until a ligature was applied to the artery above the obliterated sac.

(b) *Secondary Hemorrhage: None,* except as it occurred (in Stafford's No. 2) from causes not directly attributable to the method.

(c) *Gangrene: None,* except in Case 2 (Stafford), where it followed the application of a secondary ligature, as above described.

IX. RELAPSES.

(a) In obliterating endoaneurismorrhaphy (22 cases), none; (b) in restorative endoaneurismorrhaphy (7 cases) none; (c) in reconstructive endoaneurismorrhaphy or arterioplasty, two relapses out of five cases.

Of the two relapses amputation was performed in one case (Morris) by demand of the patient. In Danna's case (No. 2) the aneurism was cured by obliterative suture, after the relapse (following arterioplasty), became apparent. The other three patients (Craig Barrow, 2; Van Lennep, 1) have continued to do well up to date.

Arteriovenous aneurisms treated by separate suture of artery and vein, or by distinct applications of the suture technic, as distinguished from the ligature, were reported by Zoege v. Manteufel (1895), Camaggio (1898); Gerard-Marchant (1898), Peugniez of Amiens (1900), Korte (1904), Oliver of Uruguay (1904), Danna of New Orleans (1905), and Gessner of New Orleans (May, 1906).

2255 St. Charles Avenue.

DISCUSSION.

Dr. Willy Meyer, New York, reported the case of a young boy, 11 years of age, who, in cutting a stick in the woods, cut his popliteal artery by a slip of his knife. The wound was small but bled much. The boy was carried to the hotel where he was staying in a very weak condition. An improvised Esmarch bandage, a handkerchief and a stick, was applied and the nearest doctor sent for, who stitched the wound. After 12 days the boy was brought to New York, with a somewhat stiff knee. The family physician advised active and passive exercises. Four weeks later the boy noticed a throbbing tumor in the popliteal space. When Dr. Meyer first saw the patient, three months later, December, 1904, the tumor had all the characteristics of a popliteal aneurism, and having heard Dr. Matas' paper read at Albany, and being familiar with his experience with his operation, he concluded to try that method. An Esmarch bandage was applied. He cut down on the sac and found a sacculated aneurism. The sac was a large one with the opening low down, so that it was some time before he discovered just where the opening was situated. On account of this deep situation Dr. Meyer thought it best to introduce a large flexed copper sound into the lower portion of the artery, and it was pressed down by the assistant into the base of the sac so as to permit of making the suture as low as possible. After he had succeeded in running the suture across the opening, the probe was extracted and he continued the suture. After Dr. Meyer had placed the first continuous suture (silk) the crucial point came, viz., the removal of the Esmarch bandage. He was delighted to see that after its removal there was only a slight parenchymatous oozing. He closed the sac with a number of continuous sutures of chromicized catgut, and had the pleasure of seeing the whole wound heal nicely within 10 days. To-day the boy is cured entirely and uses his leg as well as he did before the operation.

Dr. R. C. McChord, Lebanon, Ky., reported a case of popliteal aneurism operated on according to the method described by Dr. Matas. The case was one of gunshot wound of the artery inflicted two years before I saw the patient. The aneurism was situated high up in the popliteal space, and at the site of the wound it was about the size of a hen's egg. It had recently burst. He constricted the leg above, cut down through the sac and stitched up the opening. But before he stitched up the sac, being a little fearful about his technic, and before closing the sac, Dr. McChord loosened the constrictor. There was a little hemorrhage. He simply took a bite down with the ligature and then proceeded to close the sac as Dr. Matas suggested. The wound healed by first intention, except one small spot where there was some infection, possibly due to faulty technic. The patient returned to his home within two weeks after the operation. The man had been home only a few days when there was a slight secondary hemorrhage. The doctors became alarmed and placed constriction above the point of bleeding for a few hours, and when the constriction was removed there was no further hemorrhage and the man made an uneventful recovery.

Dr. Stanley Stillman, San Francisco, said that he had employed this operation in one case. He emphasized the importance of thorough application of the Esmarch bandage, particularly because it is exceedingly difficult to reapply it when that is necessary. In his case, also one of popliteal aneurism, the patient stated that he had only noticed the tumor, which was about the size of a small egg, for three weeks. The sac could not be obliterated because of two reasons. There was not really a properly organized sac and the openings into the aneurism could not be closed by sutures that would hold. He advised this operation strongly, but cautioned those who attempt it to wait, in cases of recent aneurism, till the sac has become sufficiently tough to hold the sutures, and has become properly lined with endothelium.

DR. GEORGE R. WHITE, Savannah, Ga., has had two cases of aneurism on which he operated according to Dr. Matas' method. Both were aneurisms of the femoral artery, and both were of traumatic origin; one was caused by a stab wound and the other by a bullet wound. In both instances the operation was carried out successfully, and the patients are now at work and are as well as they ever were. He emphasized the point Dr. Matas made that the operation is not a difficult one if his description is followed closely.

DR. RUDOLPH MATAS said that he deeply appreciated the kind words of encouragement and praise expressed by the various speakers. He said that he realized most convincingly, however, that the good that there is in the method he suggested, especially its simplicity and safety, could never have been demonstrated without the coöperation of the 20 American surgeons who, with their characteristic alertness and keenness to test new ideas—as well as by their ability—have so quickly furnished the remarkable evidence which he submitted.

THE VALUE OF X-RAYS IN OCULAR THERAPEUTICS.

G. ORAM RING, A.M., M.D.
Ophthalmic Surgeon to the Episcopal Hospital, Philadelphia; Ophthalmologist to the Widener Memorial Home for Crippled Children, Philadelphia; Consulting Ophthalmologist to the American Oncologic Hospital, Philadelphia.
PHILADELPHIA.

Amid the illuminating advances that have characterized the rapid progress of medical science during a trifle more than the last decade, the spectacular and beneficent discovery of Professor Roentgen, of Wurzburg, occupies a position of acknowledged preëminence.

The classical papers which first startled the world of science have been followed by a flood of literature emanating from hosts of enthusiastic workers from almost every corner of the globe, and while the hopes and promises have to some extent failed of materialization yet the amazing therapeutic results that have been wrought up to the present moment should abundantly merit our profound appreciation and study.

Ophthalmic science has had its quota of fleet-footed workers, eager to develop the far-reaching possibilities of the newly discovered form of radiant energy. It is our purpose to institute an inquiry into the results thus far achieved and to attempt to define the present position of the *x*-ray therapeutics as applied to several important branches of ophthalmology.

When we consider the *x*-ray from a therapeutic standpoint we are, according to Freund,[1] dealing with the following forces emanating from the surface or within a vacuum tube in action: (1) heat, (2) ozone, (3) cathode rays, (4) ultra-violet rays, (5) rays composed of material particles, (6) Roentgen rays, (7) spark and brush discharges from the high tension, electric accumulation on the surface of the tube, (8) electric and electro dynamic waves, (9) waves of unknown character. Stern[2] believes the only rays that need to be considered are the *x*-rays, the unknown rays and the electric discharges from the surface of the tube.

The histological sequelæ of the *x*-ray application (Stern) are stimulation of the vaso-constrictor nerves of the blood vessels, paralysis of these nerve filaments accompanied by vascular dilatation, edema, the result of paralysis carried to a higher degree, and finally complete nerve paralysis, accompanied by destruction of tissue.

It is impossible in so brief a communication to place before you a complete summary of the brilliant work which the electro-therapeutist has achieved, but many opinions of value have been gleaned from the copious, and at times, polemic literature of the last few years. In answer to a communication addressed to many of the foremost ophthalmologists and *x*-ray experts of our country, I am able to present to you a number of hitherto *unpublished opinions* regarding the results of the application of this form of therapy to disease of the eyes and ocular adnexa. In the discussion to follow I hope that the various and at times divergent views expressed may be crystallized into definite and unfailing methods of technic that may make the amazing results claimed by certain observers a usual sequel of the application of this form of energy.

In a malignant disease of the eyelids and adjacent structures, radiotherapy (because of the favorable character of the resulting cicatricial tissue) finds one of the most satisfactory fields. When Steinbeck,[3] of Stockholm, exhibited before the Swedish Medical Society, a case of epithelioma, which he had cured by means of Roentgen therapy, a stimulus was given to this important work, which, *notwithstanding its triumphs, must* still be conceded to be in its incipiency.

My experience in a considerable group of epitheliomas, involving the eyelids and contiguous skin structures, and varying in size from a base of 10 mm. in its longer diameter to an extensive ulceration, at times embracing half of the upper and lower lids, and extending well on to the bridge of the nose, several of which were totally inoperable, has been so uniformly satisfying that I am accustomed to leave little doubt in may patient's mind regarding the certainty of a cure. In only one such case that has come under my observation was there any tendency to a recurrence at the end of about eighteen months. This was subjected to a few further treatments and has remained in perfect condition through the succeeding year.

Mayou[4] and D. Walsh (London) presented a most promising series of results before the Roentgen Society, Dec. 2, 1902, the former claiming that all cases of so-called rodent ulcer of the eyelids can be cured. The inflammation which can be produced by the *x*-ray varies, according to these authors, from a mild leucocytosis *(stimulation) to an absolute destruction of tissue.* Added experience seems to emphasize the opinion, early expressed, that this profound change is largely superficial, and is not produced by the rays that penetrate deeply. It is the function of the leucocytes to break up and remove all irritating substances, or to encapsulate and thus render them innocuous.

One of our foremost authorities, William Allen Pusey[5] (Chicago), reports having treated several cases of epithelioma, in which there was no involvement of the deeper orbital tissues, and all resulted in cure where sufficient treatment was permitted. No relapses have occurred, and some of the cases were treated about three years ago. John Green, Jr.,[6] St. Louis, Mo., also concludes that in epithelioma and rodent ulcer of the eyelids, *x*-ray therapy surpasses all other methods of treatment and can be relied on to cure all such cases.

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Freund: "Elements of General Radio-Therapy," Vienna, page 323.

[2] Stern: "Practical Results Accomplished by Radiant Energy," New York Med. Jour., March 10, 1906.

[3] Steinbeck: Quoted from "X-Rays in Cancer and Other Diseases," by Richard J. Caven.

[4] *Mayou: "The Use of X-Rays* in Ophthalmic Surgery," Archives of the Roentgen Ray, January, 1903.

[5] Pusey, W. A.: "Report of Cases Treated with Roentgen Rays," Chicago Medical Recorder, April, 1902. For Dr. Pusey's technic see Chicago Medical Recorder, April, 1900, and Journal of Cutaneous and Genito-Urinary Diseases, July, 1900.

Sweet[7] believes that it is no longer right to resort to plastic operations in these two conditions, basing his judgment on the successful results of 18 out of 20 cases treated.

John E. Weeks[6] (New York) regards the *x*-ray treatment of very great value in epithelioma and has placed at my disposal the notes of one private case of epibulbar epithelioma of very great interest.

The patient, a man aged 54, had a growth occupying the inner half of the ocular conjunctiva to the caruncle, and involved about the inner third of the cornea.

Diagnosis was confirmed by microscopic examination.

About 100 *x*-ray exposures were given, extending over a period from March, 1905 to January, 1906; the exposures averaging 7 minutes each at 10 inches from the Gundelach anticathode using a tube of medium tension. Patient is virtually well. Vision 20/40. Tissues of the globe have not suffered. The exposures were made through a tube 1¼ in. in diameter. There was no other protection.

De Schweinitz[6] (Philadelphia) has had four cases of "entire and rapid cicatrization" with no relapse. In two additional cases the results were entirely negative, or possibly the condition was aggravated. In one of the latter, excision was practiced with subsequent application of the rays, without recurrence. De Schweinitz concludes the rays should be tried for a certain period, and if the results are not good, then excision with or without plastic operation should be practiced.

Charles Lester Leonard[6] (Philadelphia) whose experience has been extensive in treatment of epitheliomas and various skin lesions involving the eyelids, regards it as uniformly and permanently successful. Baker[6] (Cleveland) writes that he has had five cases of rodent ulcer with perfect recovery. One case of special interest has been under observation for ten years, but all this time the disease was slowly progressive, not only the eye, but the cheek and temple were involved. The eye was enucleated and, later, *x*-ray applications were made for a year or more less regularly, resulting in complete cicatrization with no evidence of recurrence at the end of four years. In a sixth severe case in which both *x*-ray and radium were used, a complete cure has been effected, the curative agent being, in Baker's judgment, the Roentgen ray. In eight cases of epithelioma, the results have been entirely satisfactory, although in most of the cases the knife was used and followed by the *x*-ray. There have been no recurrences. Baker had two cases of lupus involving the eyelids that have been "very greatly improved if not entirely cured by the *x*-ray."

Hermann Knapp[6] (New York) has seen "four temporary results in epithelioma and the like." Stevenson[6] (Albert Lea, Minn.) has used the *x*-ray with success in treatment of lupus of the eyelids only. Newcomet[6] (Philadelphia) advises me that he has treated about 30 cases, few of which have shown any disposition to recur.

The names of a host of foreign and home workers in ophthalmologic or electrotherapy lines could be added, if additional testimony were needed, among them Hamer,[8] Hall,[9] Darier[10] and Bettremieux;[11] in our own country, Taylor,[6] Dixon[6] and Marple[6] (New York), St. John[6] (Hartford), Holt[6] (Portland), Black[6] (Milwaukee), Wescott[6] (Chicago), Howe[6] (Buffalo), Schamberg,[6] Hansell,[6] H. K. Pancoast,[6] S. Lewis Ziegler[6] (Philadelphia). Schamberg's case is of considerable interest, as the case involved not only the lids, but the conjunctiva as well., A perfect cure was effected without sign of recurrence at the end of two years.

S. C. Ayres[6] (Cincinnati) has had one case of epithelioma of outer and lower margin of right cornea of six years' duration. It was curetted, but soon recurred. Under *x*-ray treatment, pain was relieved and the condition improved. He was not kept under continuous treatment, and later increase in the growth compelled enucleation.

Bulson[6] (Fort Wayne) advises me that in four cases of extensive carcinoma two were cured, a third probably cured, and the fourth did not continue treatment. Woods[6] (Baltimore) believed the rays successful in preventing a recurrence after an orbital evisceration for extensive carcinomata.

Würdemann[6] reports a case of carcinoma of the orbit beginning in the skin of the external canthus. The operation consisted of exenteration of orbit and resection with partial removal of malar, superior maxillary and orbital process of the frontal bones. The patient was treated about two years by *x*-rays several times a week; a suspicious sore was removed by secondary operation, and the result was complete cure with full lining of orbit by skin.

X-RAYS IN SEVERE CASES.

As illustrative of the curative possibilities of the rays in the more extensive carcinomatous involvement of the orbital and adjacent tissues, it is only necessary to refer to cases of which this one reported by Dr. Pusey,[5] of Chicago, is a type:

Deep Carcinoma in the Orbit.—Patient of Dr. Wm. H. Wilder, treated by Dr. Pusey.

The growth involved all of the structures in and around the orbit, and the terrific intracranial pain seemed to leave little doubt of meningeal involvement.

After nearly two months of treatment and a resulting *x*-ray burn coincident with increasing pain, the case was regarded as hopeless and discharged. About six months later it was found he was still living; the mass had shrunk and lids would close. He is free from pain, eats and sleeps well.

Of the 10 cases so carefully reported by Chas. S. Bull,[12] two were extensive carcinomata. One was a case of the eyeball and orbit in which operation was advised, but declined. The case was cured by twenty-seven *x*-ray exposures. The other was a case of deep-seated carcinoma involving the nose, eyelids and orbit, likewise perfectly cured by thirty-four exposures.

As noted by George C. Harlan[6] (Philadelphia), J. W. Pancoast[6] and many others, with whom probably all of us are in accord, it must be remembered that in many of the deep-seated growths of the carcinomatous type the rays have totally failed to arrest the disease, but even in such cases there is little doubt of the pronounced anodyn effect of the exposures, and, while, as suggested by Nelson Black[6] (Milwaukee) and others, the deeper the orbital involvement the less favorable result can be expected, yet the estimate of Jackson[6]

---

6. Personal note.

7. Sweet, William M.: "Roentgen Ray Treatment of the Eye and Its Appendages," Medicine, April, 1904.

8. Hamer, J. F. X.: "Carcinoma palp inf. behandel med. X-Straalen," Ned Tijdskrift v. Geneeskunde, 1904, No. 12.

9. Hall, Edward: "Rodent Ulcer, Treated by the X-Rays," British Med. Jour., Jan. 10, 1903.

10. Darier, A.: "Introduction à l'étude des rayons X en therapeutique oculaire," La Clin. Ophth., July 10, 1903.

11. Bettremieux (Roubaix): "Rayons X en therapeutique oculaire," Ibid.

12. Bull, Chas. S.: "The Treatment of Inoperable Cases of Malignant Disease of the Orbit."

(Denver) that it is of great value even in the more extensive types of orbital carcinoma can be abundantly maintained.

SARCOMA.

In a previous paper[13] I considered the use of Roentgen therapy in attacking this form of malignant neoplasm. Reference was made to the remarkable result in L. Webster Fox's case of inoperable sarcoma involving the orbit and accessory sinuses apparently cured by fifty exposures to *x*-ray. A daily treatment of five minutes' duration, with a high vacuum tube placed at 10 in. distance, containing a current of 4 amperes, was maintained for 4 weeks, the frequency of the treatment then being reduced on account of an excessive erythema.

In the same paper the gratifying reports of a number of cases of sarcoma *x*-rayed by Leonard and by Pfahler, of Philadelphia, involving the face, neck, lip, nostril and antrum were accepted as giving promise of similar brilliant results with improved technic, when the growth involved the orbit and surrounding structures. The immediate application of the method was suggested before radical operation was attempted. If unsuccessful in removal of the growth, Leonard, who has had a very wide experience, claims that its virulence will be decreased and the dangers of metastasis lessened. Other methods of attack were carefully considered in the event of failure with the *x*-ray.

I will refer now to a few additional reports of cases treated by the rays as introductory to a further discussion of this important subject.

Beclere[14] reports the case of a patient affected with sarcoma of the floor of the orbit who was cured by *x*-rays. The disease had lasted four years. Two operations had been performed, the last one including removal of the eye. All other methods of treatment had failed, but improvement set in as soon as radiotherapy was employed. Histologically, the tumor was found to be a malignant sarcoma. Beclere reports an additional case of orbital sarcoma cured by *x*-rays.

Kienbock[6] reports a sarcoma cured by *x*-rays. This case is of very unusual interest. A growth having appeared in the nose seven years before, in spite of operations oft repeated, had invaded the adjoining structures and produced exophthalmos on both sides with subsequent optic atrophy. Pain ceased after the first treatment, and after thirteen applications the growth (an endothelial sarcoma) entirely disappeared. Eyes resumed their normal appearance and vision partly returned. Grossman[6] reports a similar case which had almost entirely disappeared under the *x*-rays.

Theobold[6] (Baltimore) has had one case of marked exophthalmos (unpublished) with the diagnosis of inoperable sarcoma of the orbit—a diagnosis in which two other surgeons concurred. Under the *x*-ray treatment the case rapidly improved and after a lapse of seven months seemed to be cured. Pfahler[6] advises me that he has treated three cases of primary orbital sarcoma, with resulting disappearance of the growths. A fourth case, which was recurrent, showed no ultimate improvement.

When to these reports we add the case of Mosely,[15] orbital sarcoma, that of Pratt,[15] melanosarcoma of orbit, that of Harper,[16] melanosarcomatous pigment areas on the sclera, and that of Fox,[17] true sarcoma of the lids, all cured by radiotherapy, we surely have abundant reason for some satisfaction at the results already achieved.

Many observers have utilized the rays successfully in preventing a recurrence after the removal of malignant orbital growths, notably sarcoma, and the recent experience of Wescott[6] (Chicago) and Chas. S. Bull[12] and Marple[6] (New York) will serve to bring to our attention this important phase of the subject. Wescott advises me that he exenterated a case of orbital sarcoma, and, feeling positive that all of the disease was not removed, subjected the patient to *x*-ray treatment for three months. There was no evidence of recurrence at the end of one year. On the other hand, Bull, in his painstaking report of eight cases of orbital sarcoma, has not found radiotherapy of value as a curative agent either before or after operation. He, however, believes it distinctly effective in the relief of pain. Marple has had one case of orbital sarcoma with exenteration of the orbit. *X*-ray was used in the effort to prevent a recurrence, which it failed to do. In one of my own cases it seemed to prevent a recurrence *in loco*.

TRACHOMA.

In the treatment of the nodular formations or masses of round-cell infiltration of the conjunctiva, known as trachoma, the ophthalmologist has found one of his most difficult problems. The various remedies used may be classed under the heads of chemical or mechanical irritants. The excessive and often damaging cicatricial tissue remaining after the application of the chemical irritant classes this method as far from ideal.

The rolling, brushing and other allied methods are of unquestioned value, but the cures are frequently incomplete even with the added chemical treatment. The cure is wrought, in part, by mechanically removing the diseased masses and, in part, by the induction of a leucocytosis with subsequent cicatrization. Since the disease is probably allied to lupus, it may be caused by an undiscovered bacillus, the destruction of which by the methods noted results in pronounced betterment.

Stephen Mayou[18, 4] lauds most highly the results achieved by *x*-ray treatment of this condition, claiming (1) less deformity of the lid after treatment, (2) it is practically painless, (3) the pannus clears more thoroughly. His first case, presented before the London Ophthalmological Society early in 1902, was apparently the initial application of the method. "Instead of the white puckered conjunctiva gained by other methods, a supple non-contracted, non-scarred conjunctiva, with no obliteration of the fornices," was noted. In every one of 15 cases a perfect result was achieved. No burning of the globe occurred in any case. Two-minute exposures were given from four to six successive days, followed by a week's rest; then came semi-weekly exposures until slight photophobia began. When granules disappear, the treatment should cease, as the infiltration induced by *x*-ray will be some weeks in subsiding. The patient is seated 9 inches from the anode with a moderately soft tube and a current of 6 amperes. The metal mask formerly used is now discarded, as the patient is not exposed sufficiently to get any skin reaction.

---

[13] Ring, G. Oram: "Orbital Sarcoma, with Report of a Case and a Discussion of Radical Operation, X-ray Therapy and Electro-chemical Sterilization," N. Y. Med. Jour., June 10, 1905.

[14] Beclere: "Sarcome de l'orbite gueri par les rayons-X," Gaz. des Hôp., June 14, 1904.

[15] "Radiotherapy in Ophthalmology," quoted by Allen.

[16] Harper: "Melanosarcomatous Pigment Areas on Sclera," Amer. X-Ray Jour., 1902, p. 1164.

[17] Quoted by Würdemann.

[18] Mayou: "The Treatment of Trachoma by X-Rays," Trans. of the Ophth. Soc., London, S. 10.

Stevenson and Walsh[19] selected severe cases which ordinarily required a very prolonged treatment by old methods, and they were cured in a few weeks. They report equally good results in a case treated less than two months with a high frequency current. After twenty-three painless applications of the brush discharge from a vulcanite electrode connected with a Cox's d' Arsonval apparatus, a disease disappeared that would have lingered on two or three years under ordinary treatment.

Walsh[20] (London) has treated four cases of severe double trachoma, with complete cure in two and marked improvement in the remaining two. Good effects were the same if lids were closed or everted.

Vassutinsky[21] obtained favorable effects on trachoma by means of the Roentgen rays. These rays diminished the infiltration, caused the disappearance of the granulations and of the pannus, and produced a pronounced improvement in the subjective signs of the malady. As a rule, however, trachomatous granulations disappeared but slowly under the influence of Roentgen therapy. The rays proved to be harmless in treating the eyes, no evil effects were noted in any case, nor was pain experienced by the patients. The author thinks that the rays are of service in cases in which ordinary methods of treatment fail.

Ruggero Pardo[22] reports two cases of trachoma which derived benefit from the application of *x*-rays.

CASE 1.—The patient, aged 60, had suffered from double trachoma for three years. In the right eye was dense pannus, abundant catarrh, and congested iris. The left eye was similarly affected, but to a much less degree.

CASE 2.—The patient, aged 14, had had trachoma two years. A Crookes tube with a spark about 700 mm. was used at a distance of 45 to 30 cm. for four to ten minutes at a time. Only one eye was treated, the other being carefully protected with a metallic shield. About six applications were made in each case at intervals of three days. As a result of the treatment the conjunctiva became smoother, the secretion ceased, the pannus cleared, and there was marked improvement in vision in the first case. In the second case many of the tarsal follicles disappeared, the secretion diminished, and there was considerable improvement in the subjective sensations.

Geyser[23] maintains that a few exposures, six to eight, will suffice to bring about a perfect cure. An important consideration is to cause absorption and stimulate normal nutritional processes; nothing seems to answer the purpose any better than the direct contact of the tissues with a high-frequency vacuum tube generated by a static machine or *x*-ray coil. Complete details of technic are given in the article.

Horniker and Romanin[24] (Trieste) report the history of three successful cases of trachoma treated by *x*-rays. The methods of Mayou, Cassidy, Rayne and Pardo are compared. The method of Mayou of applying the rays directly to the everted lids was selected, as the strength of current did not have to be judged with such exactness in order to prevent skin lesions. Cassidy and Rayne applied the current to the closed lids. Notwithstanding the care exercised, dermatitis of the hands developed and, for the purpose of holding open the everted lids, Romanin devised an instrument which is carefully described and which is said to make the performance perfectly comfortable to physician and patient. He claims that one single advantage of the Pardo method which makes prominent the retrotarsal fold can likewise be obtained by his instrument by placing a compress behind the everted lid and by turning the lid holder by screws. Although eminently successful in three cases, Horniker does not attempt to decide on its final value until a larger mass of authoritative material shall have been collected.

The investigation of Heineke[25] as to the results of the application of the *x*-rays in disease of the spleen and other lymph organs in rabbits, more particularly in leukemic conditions, pointed to a destruction of lymphocytes in the follicles.

Buschke and Schmidt[26] found a cessation of proliferation of cells in kidneys and testicles, which confirmed the earlier findings of Albers Schonberg[27] concerning azoospermia. These results induced Stargardt[28] (Kiel) to investigate the results of the rays on trachoma mass, which is essentially composed of lymph follicles.

Kuhnt (Königsberg) has practiced excision of the upper retrotarsal folds for many years. It was at his clinic that Stargardt was permitted to *x*-ray the folds before excision. In the application the method of Kienbach was modified; that is to say, one long exposure (twelve minutes with soft tube distance of 5 cm.). Stargardt believes there is no danger to the conjunctiva in these exposures. Microscopically the principal change was noted in the follicles. In one instance the retrotarsal fold was excised in 16 hours; in a second, 30 hours; in a third, in 14 days. In the first and second cases highly colored masses were scattered over the whole follicle which were regarded as the remains of destroyed nuclei. These masses varied in shape and size from that of a lymphocyte to that of the smallest particle. They were mostly strongly colored with the stain, a few less intensely so, though very scarce some were non-stained. These masses lie mainly between the cells, partly in the phagocytes. The phagocytes are similar to the Villard type. Their number is increased. They are unevenly distributed over the whole follicle and do not show the regular arrangement usually seen in trachoma. In addition to the increase of phagocytes, a strong increase in Villard's giant cells was also noted. The giant cells are very plentiful, and we also find from three to six large black colored nuclei which lie in a mass of plasma substance. The decrease of threads produced by the segmentation of cells was very striking.

Cassidy and Rayne[29] (Baltimore) report the case of an artist's helper who suffered for nine years from granular lids.

Patient had been operated on twice with grattage and twice by avulsion. The usual astringent and caustic treatment was also exhausted. Treatment was begun November 8, 1902, through closed lids. Cautious tentative exposures of three minutes each, separated first at intervals of ten days, then five days, then tri-weekly exposures were given at a distance of 12 inches, and a spark gap of one-sixteenth of an inch. These treatments caused excessive lacrimation which diminished on successive exposures and finally ceased. By the thirty-fifth exposure both eyes were free from trachomatous granules. The patient's lids are now little inflamed and are not thickened. The mucous membranes are still red, but free from swelling and discharge. There are absolutely no trachomatous granules, photophobia is entirely absent, and the patient uses her eyes constantly without discomfort.

---

[19] Stevenson and Walsh: "On the Curative Treatment of Trachoma by the X-ray Tube Exposure," Medical Press, 1903.

[20] Walsh: Medical Brief, No. 31, 673, 1903, also Lancet, No. 10, p. 237, 1903.

[21] Vassutinsky: "Roentgen Rays in Trachoma," Roussky Vratch, Jan. 8, 1905.

[22] Pardo: "Cases of Trachoma Treated by Roentgen Ray," Gaz. d. Ospedali, Milan, No. 13, p. 1193.

[23] Geyser, Albert C.: "The Successful Treatment of Eighteen Cases of Granular Lids by the X-ray and High Frequency Vacuum Currents," Jour. of Advanced Therapeutics, May, 1904.

[24] Horniker and Romanin: Zeitft. f. Augenhlk., 1904.

[25] Heineke: "Ueber die Einwirkung der Rontgenstrahlen auf innere Organe." Munch. med. Wochft., 1904, p. 785.

[26] Buschke and Schmidt, E.: "Tierversuche über die biologischen Wirkung der Rontgenstrahlen," V. Inter. Dermatologen-Kongress, Berlin.

[27] Albers Schonberg: "Ueber eine bischer unbekannte Wirkung der Rontgenstrahlen auf den Organismus der Tiere," Münch. med. Wochft., 1899.

[28] Stargardt, K.: "On the action of Roentgen Rays on the Trachoma Follicle," from the Eye Clinic in the University of Königsberg in Prussia. Zeitft. f Augenhk., 1905.

[29] Cassidy and Rayne: Jour. of Eye, Ear and Throat Diseases, 1903.

The effect, according to three writers, is neurotrophic. Normal tissues are stimulated to a new vigor, and pathologic tissue, always being of less resistance, assumes a retrograde metamorphosis.

At a regular meeting of the Philadelphia County Medical Society, Nov. 23, 1904, W. S. Newcomet and J. P. Krall[30] (Philadelphia) exhibited a girl of eighteen who had been subjected to all the operations for the cure of trachoma without success.

Patient was treated with the *x*-ray from July, 1903, until January 1, 1904. The inflammatory reaction was so intense that it was thought better to abandon the treatment. Later, however, it was found that she could count fingers at close range. The cornea of the eye was entirely clear and only with special illumination could fine blood vessels be seen. The eye not treated with the *x*-ray showed all the symptoms that the treated eye formerly exhibited. The condition of the patient had been present since infancy, and she had been unable to see across the room. Treatment was given every other day for five minutes for about six weeks, when a burn developed and treatment was withheld. Newcomet believed the result to be due to the accidental burn produced in the course of treatment.

H. N. Bishop[31] (London) gives the results of electrical treatment of trachoma at the Middlesex Hospital. Cases had been treated with well equipped apparatus, with rays, high-frequency currents, and radium. With regard to the *x*-rays he explains that there were two sets of rays emanating from the tube, (1) the *x*-rays proper, (2) the overflow rays that cause the severe burning of the skin which sometimes occurred. The former of these rays were used. Four cases of trachoma were treated in this manner. Two were young women. In one, fifty applications were made in five months. The right eye showed changes that might reasonably have been produced in this time without treatment, while the left, which was at first unaffected, steadily got bad. The disease subsequently cleared up in the usual manner with bluestone. None of the three other cases did any better. The seven cases treated with high-frequency currents did not improve at all.

Kassabian[6] (Philadelphia) has treated four cases in his work at the Philadelphia Hospital, two acute and two chronic. All of the photophobia and lacrimation markedly manifest in the acute cases disappeared after four or five exposures and the results achieved in all four cases were so satisfactory that Kassabian believes we have in the *x*-ray a most valuable curative agent, if properly used. Kassabian's technic in treating cases of trachoma consists in covering the Crookes' tube with a dark cloth and darkening the room. He uses adhesive plaster to fix the lids and expose the surface of the eye, to prevent the burning of the nurse's or assistant's fingers. He covers the face with a leaden sheet and treats one eye at a time through an aperture in the lead. Rapidity of action is obtained by getting the patient to keep the eye open while under treatment. There is less danger of burning the cornea than there is to the skin of the eyelid, but should a slight corneal haziness result it quickly disappears and a corneal scar will be absorbed.

W. Franklin Coleman[6] (Chicago) says that in 12 cases of trachoma his results in the treatment have been so uniformly favorable that he would not consider any other method. Coleman's first case was exposed to the *x*-ray July 1, 1903. The disease was of 20 years' standing. A high-frequency tube was used with ten minutes' exposure three times weekly. A perfect recovery resulted in six weeks. He now uses a two and a half inch spark, ten minutes' exposure at six inches with low tube, with lids closed and no mask. Every case treated has resulted in perfect cure.

Ayres[6] (Cincinnati) reports one severe case of trachoma with marked hypertrophy of conjunctiva. Three other cases, trachoma, less severe, all resulted in perfect cure. Pfahler[6] (Philadelphia) has treated 15 cases of trachoma with *x*-ray. All showed improvement, a few decided improvement. He believes the rays should be used after accepted methods have been given a fair trial. He has never seen any harm result to the eye from the exposures.

Schamberg[6] (Philadelphia) has treated one case at the Polyclinic Hospital with most satisfactory results. There were pronounced vegetations on the tarsal conjunctiva. Pain was relieved and the vegetations disappeared. In this case the eyelids were averted and the rays applied directly to the granulation. Twenty-five treatments of five minutes' duration were given twice weekly.

Jackson[6] (Denver) advises me that in his experience *x*-ray does some good and may cure acute cases, but not more quickly or certainly than older methods. It has not cured or permanently benefited the bad cases. L. Webster Fox[6] (Philadelphia) has utilized *x*-ray, but not with encouraging results. Fox prefers the older recognized remedies. Suker[6] (Chicago) states that the *x*-ray has given him no results or even encouragment in treating trachoma of any type. de Schweinitz[6] (Philadelphia) regards the results as fairly good in the few cases in which he has used the method, but considers his experience too limited to render an expression of his opinion of value. Ordinary therapeutic agents or operative measures have served him as well. With improved technic and exact dosage, the measure offers a prospect of success and should be given the fullest trial. His personal experience is limited to two cases, neither of which was as much benefited as it would have been under ordinary treatment in the same period. He has seen two cases in the care of colleagues in which the results were somewhat better than those that follow the usual applications and surgical procedures. Sweet[6] (Philadelphia) has treated a number of cases of trachoma by the *x*-rays, but did not consider the results to be any better than could be secured by the usual local measures.

VERNAL CONJUNCTIVITIS.

The utterly unsatisfactory results of all forms of treatment of this extremely intractable type of conjunctival hypertrophy determined Allport[32] (Chicago) to test the *x*-ray in a case of characteristic palpebral type.

The patient, a young lady, aged 19, living in a refined and wealthy environment, gave a history of seven years' experience with the disease. The growths were first amputated, then subjected to about eighty *x*-ray applications in less than three months. Photophobia, redness, itching and irritability were removed at once, and the patient apparently perfectly cured, since she has gone through two subsequent summers without any recurrence of the disease.

---

[30] Newcomet and Krall: Trans. Philadelphia County Med. Soc., Nov. 23, 1904.

[31] Bishop, Harman N.: "Electrical Treatment of Trachoma," British Med. Jour., Aug. 26, 1905.

[32] Allport: "A Case of Vernal Conjunctivitis," Ophthalmic Record, October, 1903.

The case was *x*-rayed by Pusey, and the diagnosis confirmed by Casey Wood, Woodruff and Guilford, Chicago.

Pusey[6] has had one additional case in which the disease was cured. William Campbell Posey[6] (Philadelphia) believes that *x*-ray exerted decided influence on the course of the disease. He has kindly placed at my disposal a brief note of his case.

The patient, a man, aged 35, came to the Wills Eye Hospital in May, 1905, with the statement that for two years preceding, during the warm months, his eyes had annoyed him greatly with itching and smarting, increased lacrimation and great sensitiveness to light. These symptoms had subsided with the appearance of cold weather again in the autumn. On examination, it was noted that the patient was suffering from a typical attack of vernal conjunctivitis of the palpebral type, the conjunctiva being greatly infiltrated and whitened, and there being a number of flattened granulations in the conjunctiva of the upper lid. The bulbar conjunctiva was unaffected.

Antiseptic washes of boracic acid and cocain, and solutions of adrenalin, in strengths varying from 1-10,000 to 1-5,000, were prescribed. The patient was instructed also to report to the Polyclinic Hospital for the administration of the *x*-rays. These were continued during the summer months, the applications being made twice a week, and each seance lasting about five minutes. Subjective symptoms were apparently greatly influenced by the rays, for notwithstanding that local treatment was interrupted for a time, the itching and smarting sensations were much less in severity. After some weeks treatment the follicles underwent a change and became markedly less pronounced. While during the preceding August and September the patient had suffered great annoyance, these months were passed in great comfort. No deleterious action from the rays, either on the eye or adnexa, was manifested at any time.

Zentmeyer[6] (Philadelphia) has had two cases of vernal conjunctivitis treated by means of *x*-ray by Sweet, one resulting in perfect cure, the second in marked improvement.

In the first of Zentmeyer's cases, a boy of 15, the affection was in both eyes, but worse in the right. The upper lids were studded with typical flat granulations. At the limbus above and to the temporal side were the nodular swellings overlapping the cornea. When treatment was stopped, a year ago, the granulations had entirely disappeared from the lids, but a few of the nodules persisted at the limbus. He passed through last summer without any discomfort and at the present time the palpebral surfaces of the lids are normal. The few nodular swellings still remain, but have not increased during the year. The boy was so satisfied with his improvement that he did not return for further treatment.

Sweet[6] had two remaining cases, which disappeared from treatment after the subsidence of acute symptoms. de Schweinitz[6] (Philadelphia) has utilized *x*-ray in only one case of vernal conjunctivitis. The treatment was of short duration, and the negative result ought not to be utilized in any estimate of the value of this agent in treating this form of conjunctival diseases. Suker[6] (Chicago) has had sufficient experience to convince him that *x*-ray treatment of vernal conjunctivitis is of positive value. Jackson[6] (Denver) believes that *x*-ray sometimes diminished the discomfort, but prolonged trial has shown no curative influence.

CONGENITAL NEVI.

At this writing I am having treated a case of nevus of the left upper eyelid, which had attained considerable proportions. There is apparently being effected a rapid cure.

Stewart (Thomas S.) and Given (Ellis V. W., Philadelphia) advise me they have likewise had several apparent successes with the rays.

CHRONIC CONJUNCTIVITIS.

By courtesy of Kassabian[6] (Philadelphia) I am enabled to add to the various types of cases amenable to *x*-ray treatment that of chronic conjunctivitis.

The patient, a man, aged 35, had suffered for seven years, with an obstinate type of this condition. Every important method of treatment had been exhausted by the two distinguished surgeons, Knapp of New York and Jackson of Denver, whose patient he had been. At the suggestion of Dr. Schneideman of Philadelphia, and with the added recommendation of Knapp and Jackson, *x*-ray treatment was begun in June, 1904. During all treatments the eyes were open, there were no signs of dermatitis, the lashes and brows were not the least affected by treatment. Patient is perfectly well. He insists on exposing both eyes to the rays once a month for five minutes, which Kassabian regards as unnecessary, considering the cure complete.

In the language of Kassabian, the technic is as follows:

Induction coil (15-inch spark producing) energized with 110-volt current, mechanical interrupter 2 amperes going to primary coil. Crookes' tube with "medium vacuum" anode being at a distance of 12 to 15 inches (30 to 38 cm.). The face and chest were covered with a sheet of lead through one opening of which the patient looked towards the tube during exposure. Treatments were given for the first three consecutive months twice a week, the time of exposure being gradually increased from one to two minutes. On September 19, 1904, after twenty-four exposures, the condition was greatly improved; the conjunctiva had become pale on the eye that was treated. During October, November and December treatment was continued only once a week, exposure two and one-half minutes. Treatment was discontinued for two months (January and February, 1905) and begun again March 1, with an exposure of three minutes once a week. Blood vessels are very small and fine, conjunctiva pale and white. Regular treatment was continued three months longer.

GLIOMA.

Hilgartner[33] gives a brief note of a most extraordinary result of Roentgen ray treatment in a case of double glioma in a child aged three and one-half years. The growth in the right eye largely filled the vitreous and could easily be seen in its incipiency in the left eye. Pain was severe. Eighty-four exposures were given. Right eye shrank to two-thirds of its natural size and the growth in left eye was entirely absorbed.

Pusey's[33] results have been sufficiently encouraging to warrant his urging the use of the rays after removal of glioma and sarcoma to prevent a recurrence.

Würdemann[6] reports one case of glioma beginning in retina and extending to orbit, maxillary antrum and nasal passages. Three exenterations of the orbit were performed. *X*-rays were finally used for one year with a result of hindrance of development and absolute prevention of pain.

GUMMATA.

Parker, F. C.[6] (Norristown) reports a most interesting case of bilateral gumma of the orbit in a child eight years of age. Diagnosis was confirmed by microscopic examination, specific and *x*-ray treatment were both instituted, and it was Parker's opinion, based on the course of the case and its final cure, that the Roentgen ray applications were of very positive value.

---

[33] Quoted by Pusey and Caldwell: "Therapeutics of Roentgen Ray," 609.

SCLERITIS AND EPISCLERITIS.

Pardo[22] in his long and interesting communication believes the results of *x*-ray in scleritis and episcleritis represent a real discovery inasmuch as at present there is no other direct therapeutic agent but only means amounting to a purely symptomatic treatment.

CORNEAL ULCERS.

Dennett[34] reports having observed that ulcers of the cornea are stimulated to rapid healing by the rays. Williams[34] reports a case of flat leucoma in the lower half of cornea. Exposures were given once a week for three months, then twice a week for two months, after which the scar was smaller, smoother, and less dense and vision improved.

UVEITIS.

Jackson[6] (Denver) is utilizing the rays in traumatic uveitis. Several times they have given immediate relief from pain and seemed to bring about rapid improvement. In other forms of uveitis he has not seen any marked effect from it.

TUBERCULOSIS OF CONJUNCTIVA.

Sidney Stevenson[35] reports the following case:

A poorly nourished, pallid child, aged 4, was placed under treatment November, 1902. Trachoma-like material was found in semilunar fold. Lid was half closed and thickened lower palpebral conjunctiva was strewn with miliary granulations and folds of coxcomb like tissue. Similar changes were in the superior retrotarsal fold. Tubercular bacilli were found locally. There were positive results from inoculation experiment. Thirteen *x*-ray exposures of ten minutes resulted in complete cure of the conjunctival disease. Enlarged submaxillary glands were present and were removed by operation.

CAUTION IN USE OF THE RAYS.

It is important that a note of warning should be sounded regarding the possibility of unlooked for results of a serious character which are said by competent observers occasionally to follow *x*-ray exposures. They would seem to indicate the very great importance of referring our cases to none but experts in Roentgen therapy. I have seen several cases of temporary corneal haze, conjunctivitis and marked episcleral congestion, but all such conditions subsided with the cessation in the use of the rays.

Dr. Henry K. Pancoast, chief of the *x*-ray department of the University of Pennsylvania, warns us regarding the possibility of the induction of severe conjunctivitis, ulceration and opacity of the cornea, edema of the conjunctiva and lids and optic neuritis. If the growth overlies the eyeball a hard rubber, ivory or metal eye spatula may be inserted under the lids.

In one of Sweet's cases of rodent ulcer the application of the rays was followed by the dulling of the mental faculties the following day. Wild reports a case of epithelioma in which the *x*-ray treatment was followed by the development of panophthalmitis, necessitating the removal of the globe. This must be regarded as a result so exceptional as to be unique.

Birch-Hirschfeld believes the rays capable of leading to very serious results if not skillfully applied. In his experiments on rabbits he believes he has certain proof of the existence of blepharitis with loss of hair and eyelashes, conjunctivitis keratitis profunda, and iritis. Some cases showed evidence of optic atrophy. The microscope in certain instances revealed degeneration of the ganglionic layer of the retina. In four clinical cases, marginal keratitis with vascularity was noted. These serious changes would seem to be the outcome of too lengthy exposures to the action of the rays. Indeed, Pusey of Chicago in one of his excellent early papers remarks on the possibility of producing atrophy of such highly differentiated epithelial structures as the retinal rods and cones, and regards the production of an inflammation of the conjunctiva as quite as likely as that of the skin structure. Hallopeau and Godaud[34] found the patient experienced a disagreeable impression of bright light after long exposure.

Subcutaneous extravasations of blood are said to have resulted in several instances, and Ehrmann quoted by Charles S. Bull described a telangiectatic appearance as a late result of *x*-ray exposure. A few cases of sarcoma and carcinoma by Burdick, Butler, Culey, Edwards and Pusey have been reported in which exacerbations of pain occurred as the result of the exposures.

CONCLUSIONS.

1. *X*-ray therapy marks a great advance in the treatment of superficial epithelioma and rodent ulcer of the eyelids and can usually be relied on to effect a cure.
2. If unsuccessful then electro-chemical sterilization may be utilized, or finally excision with or without plastic operation.
3. *X*-ray treatment has proven of value in the more extensive orbital carcinomata, but it is conceded that the deeper the growth the less favorable will be the result.
4. A sufficient number of cures of sarcoma of lids and orbit have been reported to warrant its exhaustive trial in all types of this disease. More radical operative procedures with subsequent ray applications being indicated in event of primary failure.
5. *X*-ray treatments usually exert an anodyn influence on malignant disease of the eyelids and orbit, but are occasionally reported to cause exacerbations of pain.
6. Noteworthy progress in the treatment of trachoma has been effected by the utilization of *x*-ray therapy. It should invariably be utilized if ordinary methods fail.
7. The weight of evidence indicates the positive value of *x*-ray treatment of vernal conjunctivitis.
8. There is evidence which points to the value of *x*-ray therapy in chronic conjunctivitis (Kassabian), scleritis, episcleritis (Pardo), traumatic uveitis (Jackson), conjunctival tuberculosis (Stevenson), corneal ulceration (Dennett), glioma (Hilgartner and Würdemann) and gummata (Parker).
9. It is believed that the rays will cure malignant disease involving the cornea and conjunctiva, provided treatment is applied sufficiently early.
10. The treatment of congenital nevi by the rays is likely to prove effective and should be exhausted before electrolysis or radical operation is considered.
11. Further testimony must be accumulated before an authoritative statement is possible of the effect of *x*-rays in painful types of iridocyclitis and glaucoma and other ocular diseases.

DISCUSSION.

Dr. George S. Dixon, New York, said that we have been for some time, and are still, passing through the experimental stage of Roentgen therapeutics, and that the earlier and many of the later, ideas of the greatest number of workers in this line must be toned down considerably. So much is heard about the success, but nothing at all of the failures, as few men care to acknowledge defeat, and for this reason the time for judging the exact value of any therapeutic measure is delayed.

---

[34] Quoted by Allen: "Radiotherapy in Ophthalmology."

[35] Stevenson: "Tuberculosis of Conjunctiva," Boston Med. Jour., 1903, p. 1313.

Dr. A. R. Baker, Cleveland, states that he has had a number of cases of epithelioma in which he thinks the *x*-ray has brought about recovery. He has seen several cases of sarcomatous tumors involving the sinuses in which there has apparently been no benefit, except in the relief of pain, except in one case of adenosarcoma involving the septum of the nose. He reported the case six years ago as recovered, but it recurred and an extensive operation was done, removing the growth and as much tissue as possible; in a few months there was recurrence involving the ethmoid and sphenoid sinuses. In consultation with some of the best surgeons it was decided that the case was an inoperable one, and it was turned over to an *x*-ray specialist and to the surprise of every one the patient recovered. That is five years ago and the patient is apparently enjoying good health now.

Dr. John Green, Jr., St. Louis, said that he has recently had under observation a case which illustrates the partial failure of the *x*-ray. A woman, aged 65, was operated on about hirteen years ago for mammary cancer. Six years ago she eloped a cutaneous ulcer over the right ala nasi, which inased in size and resisted caustic applications. Finally a eries of *x*-ray exposures succeeded in controlling the disease at that site. About two years ago, the disease began at the inner third of the right upper lid. Dr. Green saw her first eighteen months ago at which time there was complete immobility of the lid, with destruction of a portion of the margin. He referred her to a competent *x*-ray therapeutist who instituted treatment. In the course of the thirty seances the tumor become so much smaller that the patient could voluntarily raise the lid. In the meantime, however, a nodule appeared at the upper inner angle of the orbit which increased in size despite continuous applications of the ray. Operation was advised but refused.

Dr. Casey A. Wood, Chicago, added his testimony to that of Dr. Jackson's as to the value of the rays in the treatment of malignant tumors that are essentially fatal. He particularly referred to two he has had of secondary gliosarcoma following glioma of the retina. He had the usual experience in enucleating a number of eyes for this disease, but in one case he did an extensive evisceration and had the *x*-rays used afterward. In spite of the rays, however, the secondary tumor occurred as usual and came up to the margin of the orbit, but he was not called on for two years to do another operation, and he thinks that is of great importance. The value of the *x*-ray should not be forgotten in relieving pain and preventing the horrible edema. It helps along until the time when the meninges become affected and the patient dies from secondary invasion of the brain. If it does not cure it is at least of value as an agent of relief.

Dr. C. D. Wescott, Chicago, referred to the case of sarcoma of the orbit mentioned by Dr. Ring in which the ray was used three months and the patient was living at the end of a year. He stated that the patient is still living at the end of three years. Dr. Wescott saw the patient about a year after enucleation of the eye for sarcoma. There was a good-sized tumor which he removed by subperiosteal exenteration. The actual cautery was used on the tissues which could not be removed with scissors and curette and then the patient was subjected to the *x*-rays for three months.

Dr. W. B. Marple, New York, stated that he had one case of recurring sarcoma in which an exenteration of the orbit was done and subsequently the *x*-ray was applied to the orbital tissues. The result was entirely negative and the growth promptly recurred.

Dr. William Sweet, Philadelphia, said that he has had a number of cases of carcinoma, granular lids and vernal conjunctivitis, some of which recurred because the patients failed to return for treatment after the superficial ulcerated area had healed. Although the skin surface was completely healed, there remained a hardened mass at the site of the growth, showing that while the disease had been relieved temporarily, there were still some of the cancer cells deeply situated. In the treatment of sarcoma in the deep orbital structures Dr. Sweet said that we must not forget that active treatment without sufficient drainage is dangerous to the patient. The *x*-rays have a destructive action, and in extensive disease proper drainage must be provided, otherwise the system will be unable to elimate the broken-down tissue. Dr. Sweet has treated a number of cases of trachoma, but has failed to secure results sufficiently satisfactory to warrant the use of the rays in this disease. He has had three or four cases of vernal conjunctivitis, all of which were benefited by this treatment. One boy had typical granulations on the under surface of the lids and around the cornea. The surface of the lids became perfectly normal under the treatment and the granulations at the limbus decreased in size and number although they have not entirely disappeared.

Dr. L. Webster Fox said that since the *x*-ray plant has been established at the Medico-Chirurgical Hospital it is being used in all cases of superficial and deep growths in and about the eyelids and orbit. The first important case that was placed under such treatment was the one quoted by Dr. Ring. Since then there have been three similar cases with like results. The first evidence of benefit in these cases was the diminution in the size of the swelling and relief from pain. The first patient suffered so much that she was unconscious at times, and tetany was very pronounced. It was only with large doses of opium that rest and quiet could be obtained. After four or five applications of the *x*-ray the relief from pain and swelling was marked, and continued so throughout the treatment, until all swelling and pain disappeared. In that case, however, the patient has since had metastatic sarcoma of the liver, which caused her death. As regards the inoperable cases of sarcoma of the orbit, he said the *x*-ray should always be given a thorough trial. In the superficial cancers (the epitheliomata) the usual good results, ending in a cure have been obtained. Quite recently a case came under Dr. Fox's observation, in which two-thirds of the upper lid was destroyed. He scraped the tissues thoroughly and applied the *x*-ray for several weeks, by which time all evidence of induration had disappeared. Over this denuded surface he transplanted a flap of skin, which united perfectly. At the Medico-Chirurgical Hospital 100 cases of various inflammations of the lids from the dispensary were placed at the disposal of the *x*-ray therapeutist—the results were not satisfactory. Other means, such as grattage, sometimes bring about better results. Dr. Fox's method is to evert the lids and with a piece of ordinary gauze scrub the surface, and he thinks that the results are just as good, if not better, in the soft gelatinous papules as by any other method. He has at present an interesting case of leukosarcoma of the iris in which eight applications have been made and it looks as if the disease were slowly disappearing. If a cure can be brought about in this case it will be remarkable. Here one can observe the action of the *x*-ray directly through the transparent cornea on the growth which is now about the size and shape of a grain of wheat.

Dr. C. L. Leonard, Philadelphia, said that he is glad to note that the ophthalmologist appreciates the use of the *x*-ray and believes that it should be used by the *x*-ray therapeutist. If surgeons would appreciate that more and the medical men too they would secure better results. In the deeper growths one is able to secure perfect results. These results are coming, but they will only come with further development of technic, which we do not possess at the present time. We can hardly expect, he said, to reach the deep-seated growths that have already produced metastases. One *x*-ray specialist said that he does not consider a patient cured of malignant disease until he has died of something else and autopsy shows that the malignant disease is not there. Patients often remain apparently well for three or four years and then have recurrences. This method produces results not by removing diseased and normal tissue but by restoring the normal though altered metabolism. The cosmetic result is much better. One can not replace the hair follicles if they have been destroyed. Dr. Leonard has a patient now in whom the upper lid was more than half involved and the hair follicles were destroyed; the patient is well, but the hair can not be restored; otherwise the eyelid is like the other. Dr. Leonard agreed with Dr. Ring and Dr. Sweet that we must get rid of the broken-down tissues produced by the rays. The production of toxemia is proof of efficient treatment, but is also an indication for the cessation of treatment. The *x*-ray therapeutist learns that he must get near the production of that toxemia, but he must have drainage for the byproducts caused by the destructive process. When this is done he is approaching as closely as possible to the destruction of malignant disease and restoration to normal. We are destroying the disease *in situ*. The work is not yet perfected and we must get better results, he said, before we speak of cures. In these deep-seated growths the relief afforded by the *x*-ray treatment is a blessing to humanity. Relief from pain in these cases is constant. The patient is free from suffering without the use of narcotics which destroy the sense of perception.

Dr. D. L. Edsall, Philadelphia, declared that he is so much impressed with the importance of recognizing the great potency for harm, as well as for good, in the *x*-ray, that he should desire to emphasize the point again. A year ago in reporting the first observations that he made on the effect of the *x*-ray on metabolism, he said that it is undoubtedly the most violent known agent used for therapeutic purposes, and that this demonstrates both great possibilities for good and great potentiality for harm. Since ophthalmologists do not purposely use the *x*-ray for its general effect on metabolism, the possibilities for harm are to them of more especial importance in this regard. As indicating such harmful possibilities, he would say that he has been so unfortunate as to see, in one of his own cases and in two cases of colleagues, violent general systemic reactions to a single application of the *x*-ray. Two of these cases soon ended fatally, largely as the result of the *x*-ray exposure; while the third patient became almost moribund, but finally recovered. The last case, he emphasized especially, for it was one of chronic rheumatoid arthritis in which the direct exposure was merely to one arm from the elbow downward and it was only five minutes in duration. There was no direct exposure of the trunk, although there was a distant diffuse exposure of the whole body, as the parts not purposely exposed were not protected from exposure. This shows clearly that a very mild exposure may have an exceedingly dangerous result. He emphasized also the fact that this patient was already somewhat ill from a chronic cystitis and that the clinician in charge of him, who is a very careful man, did not recognize that the severe illness following the exposure was due to the action of the *x*-ray. Dr. Edsall, however, feels confident that it was due to this, because in a previous observation he had noted exactly the same conditions of metabolism as those which appeared in this case, in a case in which there was certainly a general violent reaction to the *x*-ray. This demonstrates also, he said, what many persons have already come to admit: namely, that occasionally dangerous reactions occur as the result of exposure to the *x*-ray, and that their relation to the *x*-ray has in many instances been entirely overlooked. It is not at all surprising, he said, that violent toxic reactions may occur as the result of *x*-ray exposures. The observations that he has made show that one exposure, even, may double the metabolic output in the next few hours; and, clearly, the necessity for metabolizing and excreting such an amount of destroyed tissue must be dangerous in a good many instances. He said that he did not desire to arouse general opposition to the use of the *x*-ray. It has been too clearly shown that it is occasionally a therapeutic agent of great temporary, and perhaps of permanent, value, and is of unquestionable diagnostic importance. He would insist, however, on the importance of employing it for therapeutic or diagnostic purposes with less recklessness than has characterized its use by many of the profession hitherto. In cases such as ophthalmologists meet it is, as a rule, sufficient to protect all parts except those that are purposely exposed; but he considers that it is extremely important to do this, in order to avoid occasional dangerous general reactions, and even if toxic reaction does not occur, we should avoid giving an unnecessary general dose of an agent that always does more than merely take a picture or influence superficial lesions. In the cases that fall into the hands of the medical clinician, the matter is even more important. In such instances, Dr. Edsall believes that it is of great importance that the patient's general condition should be thoroughly known before referring him to the *x*-ray specialist; and a careful conclusion should be reached as to whether he is a proper subject to expose at all to the *x*-ray.

Dr. G. O. Ring, Philadelphia, said with reference to Dr. Dixon's remarks on the treatment of superficial epitheliomata that his own results were somewhat at variance, inasmuch as in all of his cases there had been complete and comparatively rapid cicatrization. He had no experience with the crushing of the nodules previous to the application of the *x*-ray. He felt that Dr. Coleman's experience in the treatment of trachoma was entitled to full consideration, as the technic had probably been faultless. He would unquestionably use the rays in any intractable case. He entirely agreed with Dr. Bull as to the present limitation of the ray treatment in deep seated carcinomata and sarcomata. He has had only two cases of sarcoma, one in which there was no recurrence in loco, and another which is now under treatment; the patient is doing well, the tumor being reduced about three-fourths. Dr. Ring has had only one case of sarcoma of the iris in which there was a question of diagnosis as to one of those rare forms of congenital syphilis, tuberculosis or sarcoma. It was treated with antisyphilitic remedies and with tuberculin without result. *X*-ray treatment was begun and carried on daily, and in three weeks the growths in the iris, which had been increasing, promptly began to disappear. Two of the original nodules could be watched through the clear cornea and have now practically gone, and the third is beginning to lessen. In confirmation of Dr. Weeks' observation on retinal tolerance to the *x*-ray, he had not seen any case in which the retina showed any untoward result. Dr. Ring expressed the hope that the brilliant result in Dr. Baker's clearly inoperable case involving the accessory sinuses might with perfect technic and exact dosage be the usual sequel to the application of Roentgen therapy. Dr. Ring said that it was his purpose in the opening of the discussion to have made reference to Dr. Zentmayer's case of vernal conjunctivitis. He gave the doctor credit with using the words "perfect cure" when he preferred the word "inhibited."

THE ECONOMIC ADVISABILITY OF INAUGURATING A NATIONAL DEPARTMENT OF HEALTH.*

J. PEASE NORTON, Ph.D.
Assistant Professor in Political Economy, Yale University.
NEW HAVEN, CONN.

This is an age of progress, intellectual, social and, above all, material—of progress so colossal that the eternal forces of Nature are gradually abandoning the long fight and one by one surrendering to the mind and hand of man. But with all that has been wrought there yet remain broad gaps in our organization which, if left unheeded, may blight the civilization itself. In the present paper an attempt is made to point out what may be regarded as the most serious hiatus in our social system and to consider a possible remedy based on more efficient organization. Societies, like skillful capitalists, should strive to invest their revenues so as to yield maximum returns. When returns are direct and may be charged for, experience has shown that the management in many cases may be judiciously entrusted to private individuals. When social investments produce conditions rather than commodities, indirect services impossible to measure as they occur unit by unit, but which nevertheless result in large substantial gains measurable in the aggregate, the management must be entrusted to national agencies, sufficient in magnitude to produce the results desired.

In an age of great things, a civilization must not be staggered by its own creations. Greater and greater things must it do because of the necessity that compels it. To falter is to lose grip, and to lose grip means a more or less slow destruction of the civilization by divers melancholy wastes.

---

*Read before the American Association for the Advancement of Science, Ithaca, N. Y., June 30, 1906.

The salvation of the civilization and of the race lies in the hands of exceptional men. The hope of the race rests in its efficient organization for action. Efficient organization consists in compelling each individual to do that thing within his capability which has greatest value for society. To do otherwise is a great waste. To permit great wastes to go unchecked is more than a suicidal policy; for an evil more destructive than race suicide is race homicide.

There are four great wastes to-day, the more lamentable, because they are unnecessary. They are preventable death, preventable sickness, preventable conditions of low physical and mental efficiency and preventable ignorance. The magnitude of these wastes is testified to by experts competent to judge. They fall like the shades of night over the whole human race, blotting out its fairest years of happiness.

The facts are cold and bare—1,500,000 persons must die in the United States during the next twelve months; equivalent to 4,200,000 persons will be constantly sick; over 5,000,000 homes, consisting of 25,000,000 persons, will be made more or less wretched by mortality and morbidity.

We look with horror on the black plague of the middle ages. The black waste was but a passing cloud compared with the white waste visitation. Of the people living to-day over eight millions will die of tuberculosis, and the federal government does not raise a hand to help them.

The Department of Agriculture spends seven million dollars on plant health and animal health every year, but, with the exception of the splendid work done by Doctors Wiley, Atwater and Benedict, Congress does not directly appropriate one cent for promoting the physical well-being of babies. Thousands have been expended in stamping out cholera among swine, but not one dollar was ever voted for eradicating pneumonia among human beings. Hundreds of thousands are consumed in saving the lives of elm trees from the attacks of beetles; in warning farmers against blights affecting potato plants; in importing Sicilian bugs to fertilize fig blossoms in California; in ostracizing various species of weeds from the ranks of the useful plants, and in exterminating parasitic growths that prey on fruit trees. In fact, the Department of Agriculture has expended during the last ten years over forty-six millions of dollars. But not a wheel of the official machinery at Washington was ever set in motion for the alleviation or cure of diseases of the heart or kidneys, which will carry off over six millions of our entire population. Eight millions will perish of pneumonia, and the entire event is accepted by the American people with a resignation equal to that of the Hindoo, who, in the midst of indescribable filth, calmly awaits the day of the cholera.

During the next census period more than six million infants under 2 years of age will end their little spans of life while mothers sit by and watch in utter helplessness. And yet this number could probably be decreased by as much as one-half. But nothing is done.

In the United States alone, of the eighty millions living to-day, all must die, after having lived, say, a little more than 3,200,000,000 years of life, on the average slightly more than two score years. Of these years, 1,600,000,000 represents the unproductive years of childhood and training.

Consider that the burden of the unproductive years on the productive years is 20; 20, or say 100 per cent. Could the average length of life be increased to sixty years, say to 48,000,000,000 years lived by 80,000,000 of people, the burden of the unproductive years would fall to 50 per cent. In the judgment of men competent to hold opinions, this is not impossible.

The states' rights doctrine can be applied against the Department of Agriculture as effectively as against a national department for health. It is not, then, a question of constitutionality, but, rather, of whether or not such a department is needed by the nation.

The idea is by no means a new one. As far back as 1879 Dr. Benjamin Ward Richardson advocated by articles and books the establishment in Great Britain of a ministry of health. Solvay, in Belgium, has emphasized the importance of this field for government action. Sir Francis Galton, in recommending the study of the new science of eugenics, created by his own investigations, holds that the laws now being worked out by the brilliant group of mathematical biologists in England bearing on such subjects as heredity or homotyposis, reproductive selection, inheritance of longevity and mental traits, and disease causation, should become the basis of constructive action by the state. And this point of view has been the subject of much discussion at the meetings of the British Sociological Society.

Two years ago, an interdepartmental committee was appointed by the British parliament under these terms of reference: (1) "To determine the steps that should be taken to furnish the government and the nation at large with periodical data for an accurate comparative estimate of the health and physique of the people; (2) to indicate generally the causes of such physical deterioration as do exist in certain classes, and (3) to point out the means by which it can be most effectually diminished."

The committee returned a report recommending a permanent advisory council, in substance a national department of health, along with fifty-two other constructive measures.

In America, physicians connected with the American Medical Association for a number of years have advocated that the executive cabinet include a secretary of health. The necessity for such a department has also arisen in connection with the Panama Canal. Indirectly, two medical experts are now associated with the canal organization. In 1906, Mr. Hubert Higgins, in a book entitled "Humaniculture," elaborated the advantages and necessity for national action through a thoroughly equipped national department of health. The recent book by Dr. Shadwell, a physician, on "Industrial Efficiency" tends to the same conclusions.

Certain divisions of the work of such a department are now performed by other executive departments, and these bureaus would form excellent nuclei for the organization. The names of those bureaus now engaged to some extent along lines not foreign to the purpose of such a department and their appropriations follow:

Public Health and Marine-Hospital Service (Treasury Department)	$1,290,000
Bureau of Animal Industry for the Inspection of Meat (Department of Agriculture)	1,525,000
Life-Saving Service (Treasury Department)	1,841,000
Total	$3,656,000

The logic that justifies an annual appropriation of $2,000,000 for a life-saving service against the accidents of the sea should justify protection against accidents of disease and death. Other bureaus more closely connected with health regulation than at first sight appears are:

Bureau of Labor (Department Commerce and Labor)	$ 176,000
Bureau of the Census, vital statistics (Department Commerce and Labor)	1,400,000
Bureau of Immigration (Department Commerce and Labor)	2,126,000
Total	$3,713,000

Agitation for the factory acts, the eight-hour day, regulations concerning female and child labor and immigration is justified primarily as health regulation.

The total is, in round figures, seven millions out of a total national expenditure of about $725,000,000. These bureaus should be included in the work of the health department. Many other services, however, should be added, the beginnings of some of which appear in recent bills either passed or now before Congress.

Among these bills is the Meat Inspection Bill, which provides rigid inspection of meat and meat products and regulates the sanitation of slaughter and packing houses. These regulative powers are entrusted in the bill to the Department of Agriculture, which is unfortunately already overburdened with a too diverse series of problems. Moreover, this department is necessarily more concerned with encouraging and protecting the producers in the various industries than in guaranteeing the health of the consumer. Commercially, the interests of the producers and consumers are often at variance. This service should be administered by a national department of health.

The National Quarantine Law recently passed forms the basis for a bureau of national quarantine.

The Pure Food Law provides for the rigid inspection of food and food products, as well as drinkables and medicines. Severe penalties are imposed for adulteration and false labelling. This bill extends federal powers into affairs with which the states have dealt very generally with laxity. The grave danger in state regulation lies in the strong tendency to use these laws indirectly as a protective measure against the products of other states.

There must arise many differences of opinion with respect to the practicable division of powers in the organization of a national department of health. An organization is suggested in the following paragraphs, not for the sake of occasioning argument over details which would necessarily be the subject of careful investigation, but in order to present positive prolegomena for discussion:

1. It seems desirable that a United States National Department of Health should be established, having as its head a secretary, who shall be a member of the executive cabinet.

2. The purpose of the department should be to take all measures calculated, in the judgment of experts, to decrease deaths, to decrease sickness, and to increase physical and mental efficiency of citizens.

3. It is probable that a national department of health could be advantageously made to consist of the following bureaus:

National Bureau of Infant Hygiene.
National Bureau of Education and Schools.
National Bureau of Sanitation.
National Bureau of Pure Food.
National Bureau of Registration of Physicians and Surgeons.
National Bureau of Registration of Drugs, Druggists and Drug Manufacturers.
National Bureau of Registration of Institutions of Public and Private Relief, Correction, Detention and Residence.
National Bureau of Organic Diseases.
National Bureau of Quarantine.
National Bureau of Health Information.
National Bureau of Immigration.
National Bureau of Labor Conditions.
National Bureau of Research, requiring statistics.
National Bureau of Research, requiring laboratories and equipment.

4. At the present time of vast undertakings, the magnitude of this department should not be lightly passed over. Great ends must be wrought out through adequate organization. To make headway against death, morbidity, cancer, tuberculosis, we must use dynamite and in large charges.

To equip human machinery, consisting of exceptional men, organized and kept in action for this task, with suitable apparatus and adequate supplies, at least one hundred millions of dollars should be annually appropriated by the nation.

5. The health department should receive its support:

(a) From licenses levied on persons and industries inspected, stamp taxes and registration fees.

(b) From national appropriations.

6. The scope of the work of the fourteen bureaus is briefly discussed in the following paragraphs. The organization is framed from the standpoints of (1) economy of operation, (2) effectiveness of administration, (3) adequacy of results. It is, of course, out of the question to attempt to give specific reasons for each bureau in the space allotted:

A. Bureau of Infant Hygiene.—This bureau should investigate and regulate conditions causing infant mortality. Registration of births and marriages would enable wholesale education of parents by means of pamphlets and leaflets concerning the care of the child, food, air, dress, etc., such as the model pamphlets of the Illinois Bureau of Health. Continuation classes and education of older girls in schools, as well as regulation of female employment during and after pregnancy, are recommended by the British committee; also medical certificates as to the cause of death and registration of still births. The establishment of municipal milk stations now going on in European cities should be adopted. The famous Randall's Island experiment, where sterilized milk feeding reduced infant mortality from 41.83 per cent. in 1895-7 to 16.52 per cent. in 1904, is pertinent. McCleary estimates for eleven European cities a decline from an average of 20.2 per cent. to 18.3 per cent. by partial use of municipal milk depots. The work of Dr. Goler, of Rochester, is still more striking. The damage wrought by impure milk, soothing syrups and parental ignorance is probably equivalent to a decrease of several years in average age at death of the entire population.

B. Bureau of Education, Schools and Children's Homes.—This bureau could coöperate with the local schools in (1) medical inspection of children and anthropometric measurements, (2) extension of the New York system of disease examination by permanent nurses, (3) municipal treatment of defective eyes, ears, teeth and segregation of defective children, (4) inspection of buildings used and methods of schools, children's homes, etc., from sanitary and educational standpoints, (5) systematic education of children in right living along practical lines.

C. National Bureau of Labor Conditions.—This bureau should investigate and frame legislation for proper conditions under which labor may be employed. The excellent work already being done by the present Bureau of Labor should be expanded. The length of the working day, hours of rest, etc., should have more attention, and proper regulations should be enforced.

D. Bureau of Sanitation.—The subject of sanitation and ventilation should be very thoroughly investigated, with a view to establishing standards (1) for sewerage systems of cities and towns; (2) water supply; (3) air purity, by regulating smoke and chemical pollution; (4) proportion of building and open spaces in cities; (5) condemnation of insanitary and overcrowded house property; (6) regulation of the dust danger in cities; (7) standards for factories and mines; (8) standards for public halls, theaters and public conveyances with inspection; (9) standards of sanitation for farms where dairy products are sold; (10) adequate legislation and inspection to enforce proper regulations, and wide dissemination of useful information.

E. Bureau of Pure Food.—This bureau should provide (1) standards of purity for all foods and drinkables, (2) meat and animal inspection. The beginnings of this bureau are in the Pure Food and Meat Inspection bills, now in course of agitation.

F. Bureau of National Quarantine.—The National Quarantine Act recently passed forms a precedent for such a bureau; also work done by the Public Health and Marine-Hospital Service. An appropriation of $200,000 is, however, entirely inadequate. This bureau should (1) provide means for handling epidemics with speed, (2) regulate quarantines against infectious diseases, (3) study and devise means of handling diseases transmitted by insects.

G. Bureau of Registration of Physicians and Surgeons.—This bureau should have power to require (1) that all colleges educating physicians and surgeons be under national inspection as to curriculum and training; (2) that all physicians and surgeons be required to be registered; (3) that returns be made by physicians and surgeons of records of all cases, on official blanks, showing on analysis by the department statistical records, such as average visits per illness, cases per death, etc.; that returns be made by physicians and surgeons of all organic or chronic diseases for use of the Bureau of Organic Diseases; (4) that licenses be issued barring general practitioners from treating special diseases requiring skill above that evidenced by training; (5) that the standard of the profession be raised by protecting the exceptional men and barring quacks, charlatans, etc.

H. Bureau of Registration of Druggists, Drug Stores and Manufacturers of Drugs.—This bureau should have the necessary powers (1) to regulate the standard of drugs, and to require drugs to be sold, as far as possible, in unbroken packages under seals; (2) to regulate "patent medicines" by requiring contents printed on labels, under government stamp, and severely punishing both newspapers and manufacturers for the insertion of false or fraudulent advertising matter calculated to deceive the public; (3) to regulate preparations of prescriptions by doctor and druggist, by fixing standards, and by summarily punishing substitutions; (4) to maintain competent inspectors and to enforce such regulations as shall accomplish the results; (5) to prepare and to furnish druggists, doctors, etc., with a weekly or monthly bulletin containing orders and instructions in a systematic educational campaign.

I. Bureau of Registration of Institutions of Public and Private Relief, Correction and Detention.—This bureau should investigate conditions in institutions and establish standards. The inmates should be the subject of experiments in diet, hygiene, sanitation, etc., and also of statistical inquiry. The census has recently issued a bulletin in this field.

J. Bureau of Immigration.—This bureau should include in addition to the present service, provisions for the study of races, desirable immigration, mixture of races and also distribution locally.

K. Bureau of Organic Diseases.—The data returned by physicians in compiling notifications concerning chronic and organic diseases with history should be a field for study. Means should be taken educationally (1) to ameliorate and advise by pamphlets; (2) to follow up and to study for causes and remedies; (3) to furnish practitioners with directions for treatment. Dr. Solis Cohen estimates that consumptives alone now number not fewer than 1,000,000. The importance of the work can not be overestimated.

L. Bureau of Health Information.—This bureau should adopt methods used by the Department of Agriculture, the follow-up pamphlet, etc., with a view to disseminating reliable information couched in plain language concerning right living as widely and as thoroughly as possible.

M. National Bureau of Research Requiring Statistics.—In human beings differences in habits are probably more important than difference in physical characters in determining the optimum health, and in warding off morbidity and mortality, as well as criminality. Habits should be investigated to a far greater extent than they have been hitherto. The highly exact methods of statistical analysis, involving the theories of variation, correlation and regression, should be applied to this field on a large scale. Such questions as the correlation of food habits and alcoholism with mental and physical efficiency, value of foods experimentally determined by results in connection with mental and physical efficiency rather than by laboratory theories, effects of longer or shorter labor day on efficiency, correlation of the number of open windows and cases of sickness, etc. Such questions of vital interest can be determined to a finality by the new statistical analysis. The opportunity presented by the possibility of experiment with the diet of the Army, the Navy, the inmates of houses of detention and correction, should not be lost. The preparation of all blanks in use by all other departments should be subject to the approval of this department, which should have at its head exceptional men. The vital statistics of the census should be managed by this bureau. The necessity for experts of the highest order is discussed in a subsequent section.

N. National Bureau of Research Requiring Laboratories and Apparatus.—This bureau should endeavor systematically to extend knowledge of remedies for the deadly diseases which may be advantageously pursued by laboratory methods.

The organization in vogue among modern business corporations and the practice of playing off against each other several experts engaged in independently solving the same problem should be adopted. That which can be accomplished through the organization of the world's exceptional men under the lash of failures and stimulus of great rewards is of vast magnitude.

The vital problem for the Department of Research is to make new discoveries of value at a rapid rate. New discoveries or inventions in general depend on the number of exceptional men in a society capable of such work. Exceptional men are in degrees as one in a thousand, one in a million, an Edison, one in two hundred million of a population. An art discovered by one such man becomes operative for an entire population. The necessity of employing experts can not be overemphasized. The possibilities of a civilization efficiently administered by exceptional men practically renders negative the evils of the Malthusian theory.

1. The greater the population the greater the number of exceptional men of all degrees, since exceptionality depends on a ratio to the total population.

2. The value of the work of a given exceptional man capable of producing an invention, depends on the value of the invention to the average man who uses it, multiplied by the number of users, who are in ratio to the total population.

3. Two results emerge: (a) The value of the work of an exceptional man increases directly with the growth of the population. (b) Society gains greatly through the increase in its numbers, since every member of the population on the average is served by all of the exceptional men. The value of the work of a Luther Burbank, an Edison or an Eli Whitney is incalculable.

From the standpoint of eugenics, it is desirable: (1) To select as early as possible the exceptional minds; (2) to afford these minds every opportunity of training and education; (3) to place them in operation where their exceptionality may prove advantageous to society; (4) to place in operation instantaneously the results of their work. How large are the appropriations now made for the defective children who must forever be a burden on society. How little has been done for the exceptional children who must carry by their work both the defective and the average of the population. Professional organizers understand the importance of this phase, Carnegie in his libraries and institutes, Rockefeller in the Rockefeller Institute and Chicago University. *A fortiori* the nation should provide for this necessity.

The economic reasons for establishing a National Department of Health are five:

1. To enable society to progress more rapidly under the law of increasing returns through increasing the percentage of exceptional men of each degree (many of whom are now lost through preventable accidents), in addition to increasing the total population.

2. To lessen the burden of the unproductive years on the productive years by increasing the average age at death. If we estimate the average span at 40 years, and 20 years as unproductive, the ratio of unproductive to productive years is 100 per cent. Without venturing an opinion as to the true figures after the manner of La Place, I have calculated what would be the economic gain if average span were 40, 45, 50 and 55 years and also the burden of an unproductive year at $100 and $200. The annual gains are shown under the various hypotheses. Thus if the average life-span of a class of the population can be increased from 40 to 45 years, the economic gain would be $25 to $50 per head. Assuming 40,000,000 of productive age in the United States, the burden of the unproductive years of childhood, lightened by an increase in the average life span, from 40 to 45 years would be $800,000,000 to $1,600,000,000 per annum, and an increase of ten years would result in savings of $1.320,000,000 to $2,640,000,000 per annum.

Burden of Unproductive Years on Productive Years.

Average span of life in years	40	45	50	55
At $100, per cent	100	80	67	57
Measured in dollars, per capita	$100	$ 80	$ 67	$ 57
Gain for period		20	13	10
Total gain		20	33	43
At $200	200	160	134	114
Gain for period		40	26	20
Total gain		40	66	86

3. The third economic reason for establishing a department of health is to decrease the burden of death on the productive years by increasing the age at death. If the expense of illness and death are $300, and the average age at death is 40 years, the average death expenses average $15 on the twenty productive years. Could the average age be increased to 50 years, the burden falls to $10, or a decrease of 50 per cent. For 80,000,000 of people, the saving of $1.50 per year of life would be equivalent to $120,000,000 per annum.

4. The fourth object of the plan would be to lessen the economic burden of sickness. Assuming Newholme's figure of 9 days' average illness per annum, approximately 2,000,000 years of life are lost per annum. Estimating wages at $1 a day, and all other expenses $1 a day, $1,444,000,000 loss per annum is registered by this item. Could the days of illness be cut down one-third, nearly $500,000,000 would be saved.

5. Higgins has estimated that six hundred millions are now spent on criminality in the United States. If the criminality is largely the product of the social environment, such as overcrowding, alcoholism, etc., measures which would decrease this only fractionally are worthy of consideration. A decrease of 16 2/3 per cent. would result in savings of $100,000,000 per annum.

For the last four estimates the total savings range between $1,800,000,000 and $4,000,000,000 per annum.

In addition to the economic gain, the establishment of a National Department of Health would gradually but surely diminish much of the misery and suffering that can not be measured by statistics. Sickness is a radiating center of anxiety; and often death in the prime of life closes the gates of happiness on more than one life. Let us not forget that the "bitter cry of the children" still goes up to Heaven and that civilization must hear, until at last it heeds, the imprecations of forever wasted years of millions of lives.

If progress is to be real and lasting, it must provide whatever bulwarks it can against death, sickness, misery and ignorance; and in an organization such as a National Department of Health—adequately equipped—a vast preventive machine—working ceaselessly, an attempt at least would be made to staunch those prodigal wastes of an old, yet wastrel world.

HYPERSUSCEPTIBILITY.*

M. J. ROSENAU, M.D. and JOHN F. ANDERSON, M.D.
Director and Assistant Director, respectively, of the Hygienic Laboratory, United States Public Health and Marine-Hospital Service.
WASHINGTON, D. C.

(Abstract.)

The phenomenon of hypersusceptibility has long been recognized, but has been overshadowed in modern studies on immunity. Instances of hypersusceptibility to certain infectious diseases, bacterial toxins and other substances may be found scattered through the literature. The well-known hypersusceptibility to tuberculin in animals infected with tuberculosis has received much attention, but the importance of hypersusceptibility in general pathology has not been realized.

At first glance it would appear much more important for an organism to be *hyposensitive* than *hypersensitive* to infectious processes, but a closer study of the com-

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Dr. G. F. Ruediger, Chicago, said that about a year ago he was approached on this subject of untoward symptoms following the use of antitoxin by the representative of a manufacturer of antitoxin, who showed letters indicating that the writers got their most serious results after several injections had been given. From the reports in the literature he came to the same conclusion mentioned by Dr. Rosenau: that is, that many of the most alarming symptoms are observed after the first injection. The letters showed, however, that these doctors got very alarming symptoms, with collapse in some instances, after several injections had been given and not after the first injection. These reports are not published, as a rule.

Dr. Theobald Smith, Boston, said the subject had interested him since 1902, although no special effort has been made to analyze the phenomenon. He remarked that guinea-pigs which have received no preliminary doses of serum may die and that of those which have received a fairly large dose of serum at the outset nearly all are thereafter immune. The problem, therefore, is very complicated. He presented his results in the following table:

GUINEA PIGS

Preliminary treatment	Final treatment	Number treated	Results			% of illness or death
			Died	Re-cover'd	No effect	
3cc—5cc diph. antitoxin	3—5cc diph. antitoxin	31	2	—	29	6.45
nothing	3—5cc diph. antitoxin	58	9	—	49	15.5
diphtheria toxin only	3—5cc diph. antitoxin	10	—	—	10	0
dipth. toxin + antitoxin (serum 1/200—1/400cc)	3—5cc diph. antitoxin	18	10	3	5	72.3

Dr. Smith said that an interval of two or three minutes elapsed between the first and second injections. None died after the first treatment. He did not know whether or not the animals were the young of guinea-pigs that had been treated.

Dr. Rosenau said that he wished that he could believe that Dr. Vaughan's explanation is the correct one, being so plain and succinct. It is very easy to expand Ehrlich's side-chain theory to fit these facts by adding, subtracting or modifying a receptor. Dr. Anderson and he had felt that they could safely let Ehrlich modify his own theory to include the new facts. With Dr. Vaughan he realized that chemistry may some day explain the complex and multiple processes constantly going on in living protoplasm. It seemed to him that science has not yet reached that stage where it can assign a definite chemical molecular structure to such a complex, highly-organized and changing substance as protoplasm. Those who constantly deal with the material sciences would like a physical or chemical explanation of life. A correct explanation of the phenomenon studied in the guinea-pig would bring nearer the solution of many problems connected with metabolism and the fundamental processes on which existence depends.

DETERMINATION OF THE NORMAL TEMPERATURE OF THE CLOSED INGUINAL FOLD OF A CHILD, AND ITS CLINICAL SIGNIFICANCE.*

ALBERT H. PARKS, A.M., M.D.

CHICAGO.

HISTORY.

The practitioner of medicine is constantly looking to science and research for methods he may use in his routine work. Most practitioners seek methods which combine two characteristics, accuracy and practicability, but these are often diametrically opposed. I have attempted to solve a problem in a manner that shall yield results at the same time accurate and easy of application to the clinical case.

Normal and pathologic conditions in the animal body are very intimately connected with, and in fact dependent on, the production, the distribution and the variation of that phenomenon called animal heat.

Medical and scientific literature is replete with all phases of this subject, and I intend to touch on only those points of measurement which may be included in the term thermometry.

The practitioner usually adopts the practice of taking the patient's temperature as one of the first steps in his routine examination. Two methods of estimation as pertains to clinical thermometry are in vogue, namely, the internal and the external. Both have their adherents and applications. Some writers contend that the only true measurement of the temperature of the body can be obtained from the internal cavities, while others state that external methods are sufficiently correct for purposes of clinical study.

The following table shows the results of observations by several authors who have made extended studies along these lines:

TABLE 1.

Maximum.		Minimum.		Mean.		Author and Place.
F.	C.	F.	C.	F.	C.	
99.05	37.2	97.7	36.5	98.42	36.9	Davy[1]: Mouth.
99.5	37.5	98.24	36.8	99.05	37.2	Gierse[2]: Mouth.
98.6	37.0	97.34	36.3	98.06	36.7	Hooper[3]: Mouth.
99.14	37.3	97.88	36.6	98.6	36.7	Hallman[4]: Mouth.
98.6	37.0	97.88	36.3	98.24	36.8	Clifford Allbutt[5]: Mouth.
100.4	38.	97.16	36.2	98.6	37.0	Wünderlich[6]: Axilla.
99.32	37.4	96.98	36.1	98.24	36.8	Leibermeister[7]: Axilla.
98.78	37.1	98.06	36.7	98.42	36.9	Damrosch[8]: Axilla.
99.32	37.4	96.98	36.1	98.06	36.7	Billet[9]: Axilla.
100.2	37.9	97.34	36.3	98.78	37.1	Billroth[10]: Axilla.
100.4	37.8	97.7	36.5	99.05	37.2	Turgenson[11]: Rectum.
98.78	37.1	97.88	36.6	98.24	36.8	Neuhaus[12]: Rectum.
99.14	37.3	98.42	36.9	98.78	37.1	Jaeger[13]: Rectum.
99.32	37.4	96.98	36.1	98.24	36.8	Nicol[14]: Rectum.
99.5	37.5	99.32	37.4	99.14	37.3	Hall[15]: Rectum.

The average of the mean observations in Table 1 for the mouth temperature is 98.47 F. (36.93 C.), for the axilla 98.43 F. (36.91 C.), for the temperature of the rectum 98.81 F. (37.12 C.). This shows that the difference between the mouth temperature and the axillary temperature is very small, approximately .04 F. (.02 C.). The variation between the axillary and rectal temperature is somewhat larger, being .38 F. (.21 C.). The maximum average for the temperature of the mouth is 99.42 F. (36.91 C.), the minimum being 98.47 F. (36.93 C.); for the axilla, maximum 99.60 F. (37.56 C.), minimum 98.42 F. (36.91 C.), and for the rectum, maximum 99.33 F. (37.41 C.), minimum 98.69 F. (37.05 C.).

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* From the Department of Physiology, Northwestern University Medical School.

1. Davy: Phil. Trans., London, 1845, part 2, p. 319.
2. Gierse: "Quænam sit ratio caloris organici, etc." Halae, 1842, p. 40.
3. Hooper: Med. Times and Gaz., London, 1866, vol. ii, p. 483.
4. Hallmann: Quoted from Landois Lehrbuch d. Physiol. Aufl. 3, S. 406.
5. Clifford Allbutt: Jour. Anat. and Physiol., London, 1872, vol. iii, p. 106.
6. Wünderlich: Medical Thermometry, p. 95.
7. Leibermeister: "Handbuch d. Path. u. Therap. d. Fieberd," 1875, p. 78.
8. Damrosch: Deuts. Klinik. Berlin, 1862, vol. ii, p. 331.
9. Billet: These, Strasburg, 1869.
10. Billroth: Arch. f. Klin. Chir., Berlin, 1862, vol. ii, p. 331.
11. Turgensen: "Die Korper warme des gesunden Menschen," Leipsig, 1873.
12. Neuhauss: Virchow's Arch., 1893, vol. cxxxiv, p. 365.
13. Jaeger: Deuts. arch. f. klin. Med., Leipsig, 1881.
14. Nicol: Quoted.
15. Hall: "Text-Book of Physiology."

Many authors quote higher readings, especially for the rectal temperature, and also declare that the difference between the rectal and axillary temperature is greater, while a few are under the above figures. My observations regarding rectal temperature closely correspond with the results of the above table, with the exception that the range of variation was greater, due to the fact that the temperature range of children is more variable than that of adults.

It can not be denied that for purposes of accuracy the natural closed cavities of the body give more constant and reliable results than surface temperatures, or the artificially closed cavities as the axilla, or the groin.

The surface of the body naturally responds more quickly to the variations in temperature of the surrounding medium, and in some instances the variation is considerable. For instance, in the case of rigor the surface temperature falls several degrees, while the internal temperature is steadily rising. This is further shown by the tests made during the defervescence of fevers, in which case the temperature of the blood falls, while the surface remains at fever heat. A very rapid fall of temperature in an external part likewise corresponds to a very rapid rise in the internal parts. In the vast majority of cases the external cavities of the body, as the axilla and the groin, if properly closed for a few minutes, soon approximate the internal temperature of the body.

In taking the temperature of infants, to which class of patients I now confine my attention, we are confronted by an inability to use the ordinary oral method employed so extensively in adults, and so we are forced to rely on some other means for estimating the body temperature.

METHODS.

The following methods are being used or have been suggested by various authors:

1. Internal surfaces...............rectum, vagina
2. External surfaces.................axilla, groin
3. Freshly voided urine.

The first or rectal temperature has been the accepted method and probably gives the most constant and reliable results. It has always enjoyed the greatest popularity in the practice in hospitals and institutions, while the practitioner in the private home has often made objections to it, as it is sometimes repulsive to his other patients or friends in the home. An oral temperature for the mother, following a rectal temperature for the child is likely to raise a suspicion in the mind of the former that her esthetic interests are not properly guarded by the physician. It is sometimes no justification to say that separate thermometers are kept for each purpose or that the instrument has been properly cleansed, for, in fact, that necessary procedure is sometimes neglected.

Objections are also raised to this method, as it can seldom be repeated often enough for the exigencies of many cases unless the physician is in constant attendance or is assisted by a professional nurse. It is not safe to intrust an unskilled hand with the introduction of the thermometer into the rectal cavity of an infant, for injury to the rectum has been reported in several cases from careless manipulation of the instrument both by means of force and by breakage. A rectal fistula with the introduction of septic material would present a serious condition in an infant. The rectal temperature necessitates an unnecessary exposure to cold and drafts, and is often entirely unreliable, due to contact with or the introduction of the bulb of the thermometer into a mass of feces.

Still lesss suitable is the method of taking the temperature in the vagina. The taking of the temperature of the freshly voided urine is only mentioned to be condemned.

We are left now to the consideration of the last two methods, external temperatures, taken in the temporarily closed cavities, namely, the axilla and groin. The temperature of the well-closed axilla has probably been the most used and convenient method employed by the practitioner for many years in those cases in which he did not wish, for any reason, to take a rectal temperature. The use of the thermometer in this location is not attended with many difficulties and it overcomes many of the objections to the former procedures. It is also shown by Table 1 to be approximately correct, varying from .38 F. to .21 C. from the rectal temperature.

The temperature of the groin, which has been suggested at various times by numerous authors and employed in practice by a few, possesses many advantages and gives results somewhat similar to those of the axilla. The literature to date does not give any complete records of clinical observations of temperatures taken in the groin nor does one find any description of the technic which would seem to possess many points of interest or value.

I present the following observations made on 175 individual cases: a. The age of the patients varied from 4 months to 5 years. b. Normal cases were used so far as possible. c. Mean readings were taken in all cases used as a basis for the determination of the normal temperature of the groin. d. For comparative results in the groin and rectum, individual readings were largely used without reference to number or time. e. In all observations identical conditions were obtained in each case, and these same conditions were produced so far as possible in all cases as a whole. f. The thermometers used in this work were the ordinary one-half minute self-registering clinical thermometers corrected to the same standard instrument.

TECHNIC.

The following technic was used in these cases:

I. Rectal method.
    1. The ordinary technic was used. The bulb of the thermometer was introduced well into the rectum and the readings recorded when the mercury became stationary.
    2. The child was exposed as little as possible.
II. Inguinal method.
    1. The clothing was loosened, but not removed, so as to be free from the groin.
    2. The groin was wiped dry with a towel to remove all secretions from the skin.
    3. The thermometer was placed deep in the inguinal fold and the leg allowed to return to its natural position of adduction.
    4. Readings were taken *in situ* until the maximum reading was reached.

TABLE 2.

Case.	Morning 8-10 a. m.		Nigh 3-5 p.m.		Mean.		Place.
	F.	C.	F.	C.	F.	C.	
1. Age 2 years	98.72	37.1	99.1	37.3	98.91	37.1	Rectum.
	98.5	36.9	98.62	37.0	98.56	36.9	Groin.
2. Age 9 mos.	98.9	37.15	99.0	37.2	98.95	37.1	R.
	98.64	37.0	98.5	36.9	98.57	36.9	G.
3. Age 4 years	99.0	37.2	98.7	37.1	98.8	37.1	R.
	98.8	37.1	98.6	37.0	98.7	37.1	G.
4. Age 18 mo.	98.2	36.8	98.5	37.0	98.35	37.1	R.
	97.7	36.5	97.9	36.6	98.0	36.6	G.
5. Age 3 years	100.1	37.8	100.4	38.0	100.15	37.9	R.
	99.8	37.7	99.8	37.7	99.8	37.7	G.
6. Age 1 year.	97.9	36.6	98.0	37.2	97.95	36.6	R.
	97.7	36.5	97.9	36.6	98.0	36.6	G.
7. Age 4 mos.	99.4	37.4	99.1	37.3	99.25	37.3	R.
	99.4	37.4	99.0	37.2	99.2	37.3	G.
8. Age 6 mos.	98.6	37.0	98.65	37.0	98.62	37.6	R.
	98.	36.7	98.2	36.8	98.1	36.7	G.
9. Age 2 years	99.1	37.3	99.3	37.4	99.2	37.3	R.
	98.6	37.0	98.7	37.1	98.65	37.0	G.
10. Age 1 year.	98.8	37.1	98.7	37.1	98.71	37.1	R.
	98.6	37.0	98.6	37.0	98.6	37.0	G.

TABLE 3.

Age.	Rectum.		Time.	Groin.		Time
	F.	C.		F.	C.	
18 months	98.8	31.1	4 min.	98.6	37.	6½ min.
1 year	99.32	37.4	3 min.	99.0	37.2	7 min.
4 years	98.06	36.7	3½ min.	97.8	36.6	5½ min.
6 months	99.1	37.3	5 min.	99.0	37.2	5½ min.
9 months	97.8	36.6	4½ min.	97.49	36.4	6 min.
4½ years	98.0	36.7	4 min.	97.6	36.5	6½ min.
2 years	98.78	37.1	6 min.	98.65	37.0	7 min.
1 year	100.04	37.8	3 min.	99.5	37.5	5½ min.
8 months	99.0	37.25	3¼ min.	98.7	37.1	8 min.
18 months	98.8	36.7	4½ min.	98.5	37.0	4¾ min.
3 years	97.9	36.6	5½ min.	97.4	36.3	6½ min.
10 months	98.05	36.7	5 min.	98.0	36.7	6 min.
4 years	99.0	37.2	3½ min.	98.4	36.9	8 min.
5 years	99.14	37.3	4 min.	99.0	37.2	5 min.
4 months	100.2	37.9	3 min.	100.0	37.8	4½ min.
18 months	98.2	36.8	3¼ min.	97.4	36.3	3½ min.
2½ years	98.42	36.9	4½ min.	98.1	36.7	5½ min.
1 year	98.6	37.0	3 min.	98.1	37.7	7 min.
10 months	99.1	37.3	3½ min.	98.9	37.1	6½ min.
3 months	97.8	36.6	4½ min.	97.6	36.4	5 min.

RESULTS.

The few cases given above in Tables 2 and 3, selected at random from the entire number, will show that the difference between internal temperature (rectum) and external temperature (groin) is comparatively small.

The results of the entire number of mean cases under observation show that the average difference between the temperature of the rectum and the closed groin is .34 F. (.18 C.) while the normal temperature of the closed inguinal fold of a child is 98.52 F. (37.5 C.). The greatest difference found in any one case was 1.5 F., while the majority of the cases ranged close to average found. In a number of readings the results of the groin and rectal readings were the same, while in a few cases the inguinal temperature was higher by a fraction of a degree. In most of these cases the lower rectal temperature was found to be due to the contact of the thermometer bulb with fecal masses. In such cases the readings were discarded as not representing the true rectal temperature.

The time element, which is an important one, was carefully worked out and recorded. It was found that with the above technic the rectal method required three and one-half minutes for a complete register of the thermometer, while the inguinal method required six and three-quarters minutes. We did not find that so long a time was necessary for correct results as some authors quote for external reading.

The clinical ease of application of the two methods offers interesting results. The great majority of cases under observation were obtained from hospitals and public institutions, and so we were not forced to face the objections which many practitioners meet with in the employment of rectal temperature. We were impressed with the great facility and ease of the inguinal method. The natural attitude of the child while retaining the thermometer in the closed groin made the usual struggling and crying unnecessary, and with but few exceptions the temperature of the groin was taken without any resistance or disturbance from the child.

It was not found necessary to hold the thermometer in the hand during the process, for the natural close apposition of the thigh to the body retained the instrument in place without any trouble, with the exception of a few cases which showed extreme emaciation. In such a condition more satisfactory results may be obtained from the internal than from the external method. If it is necessary to use the external method the groin possesses obvious advantages over the axilla.

It was not feasible to consider the influence of cold or of extreme heat on the body surface as in sudden chilling or in a rapid rise in the atmospheric temperature, as the patient was protected in all cases, but a rise of .2 F. was observed in the inguinal temperature of one child directly after a warm bath.

With the thermometer in the groin and the leg retained in apposition to the body either by the hand of the nurse or the doctor, the time required for the register of the thermometer can be employed with advantage to a further study of the case.

The inguinal method is absolutely safe for the employment of the mother or the non-professional nurse, the only requisites being an acquaintance with a few simple rules of technic and an ability to read correctly a thermometer scale.

SUMMARY.

a. The normal temperature of the closed inguinal fold of a child is 98.52 F. (37.5 C.).

b. The variation of the inguinal temperature from the rectal temperature approximates one-third of a degree F. or two-fifths of a degree C., the average variation being .34 F. (.18 C.). That is, the inguinal temperature is approximately one-third of a degree F. (two-fifths C.) below rectal temperature.

c. The usual variation between the temperature of the rectum and groin is so small as to be practically disregarded for clinical purposes.

d. The absence of many objectionable features of the rectal method and the ease and reliability of the groin method gives the latter several points of advantage over the rectal method. These advantages of the groin method would recommend it not only as applicable in hospital practice in pediatrics, but more especially in home practice among children.[16]

---

[16] For further literature on the subject the reader may consult Schofer: "Text-book of Physiology"; Cohen: "System of Physiologic Therapeutics"; Vierordt's "Physical Diagnosis"; Rotch: "Pediatrics"; Holt: "Diseases of Children"; Boilean: Lancet, Lond., 1888, vol. ii, p. 204: Starr: "Diseases of Children"; Ashby and White: "Diseases of Children"; Landois and Sterling; "Physiology"; Ringer and Stewart: "Proceedings Royal Society," London, 1877; vol. xxvi, p. 186; Crombie: Indian Am. Med. Sc., Calcutta, 1873, vol. xvi; Oertmann: Arch. f. d. ges. Physiol., Bonn, 1878, vol. xvi; Lorain: "De la temperature du corps humane," Paris, 1877, vol. i, p. 434; Redord: "Etudes de thermometric clinique," 1874, p. 20; Davy: "Researches," London, 1839, vol. i, p. 199.

Skill Acquired by Long and Diligent Application.—In this day of "workless" methods of doing things, remarks the *Western Medical Review*, it will be wise to realize that there are certain ends which can only be obtained by conscientious as well as conscious efforts. There is no method of attaining skill and accuracy of diagnosis except that method which involves long and painstaking mental and manual education.

Special Article

A FORGOTTEN WORTHY, DR. DIEGO ALVAREZ CHANCA, OF SEVILLE, SPAIN.

A. M. FERNANDEZ DE YBARRA, A.B., M.D.
NEW YORK CITY.

With Christopher Columbus, on his second voyage of discovery to America, in the year 1493, there came Dr. Diego Alvarez Chanca, a distinguished practitioner of much learning and professional skill, who held the position of physician-in-ordinary to the King and Queen of Castile and Aragon, and had attended their first-born child, Princess Isabella (who afterward became Queen of Portugal) during a serious illness the year before. He was a native of the city of Seville, and had been especially appointed by the Spanish monarch to accompany that expedition, not only on account of its great political and commercial importance, but also because among the 1,500 persons who came over from Europe to America in that fleet were several distinguished personages and a large number of aristocratic young gentlemen, restless and daring warriors who had done excellent service in the war just ended against the Moors. As an able practitioner, he saved the life of Christopher Columbus, who suffered a very dangerous attack of typhus fever on one occasion and pernicious malarial fever on another occasion, as well as the lives of many Spanish hidalgos who were at the point of death as victims of disease during their stay at the island of Hispaniola or Haiti, as the aborigines called it.

The second expedition was altogether different from the one sent out the previous year in quest of a new passage to the Indies. Instead of the three small caravels, carrying only 120 persons, which accomplished the most transcendent event in the history of humanity—the discovery of the western hemisphere—this flotilla was composed of three great galleons or carracks and fourteen caravels of different sizes. It was well provided with all the requisites for the establishment of a permanent settlement in the land that had been discovered the year before. Even 20 horses for as many lancers (which played a most terrorizing influence among the American Indians) were also on board those vessels.

On their arrival at the island of Hispaniola or Santo Domingo—where the year before Columbus had left 38 men in an improvised fortress, constructed with the remains of the caravel *Santa Maria*, wrecked on the reefs of the shore—Dr. Chanca wrote in the Spanish language of the fifteenth century his famous letter to the Municipal Council or *Cabildo* of his native city, which manuscript is unquestionably the first written document about the flora, the fauna, the ethnology and the anthropology of America.

Dr. Chanca's letter was written at the port of Isabella, during the last days of January, 1494; it left that port February 2, in care of Don Antonio de Torres, commander of the twelve vessels sent back by Columbus to Spain with the news of the discoveries, and arrived there April 8, 1494.

On his return to Spain Dr. Chanca published, in the year 1506, a treatise entitled "Para curar el mal de costado," (The Treatment of Pleurisy) and a commentatorial work in Latin, criticising the book entitled "De Conservanda Juventute et Retardanda Senectute," whose author was another celebrated Spanish physician named Dr. Arnaldo de Villanova. The title of the second work of Dr. Chanca is "Commentum novum in Parabolis divi Arnaldi de Villanova," which was printed in Seville, the year 1514.

Here now follow some scattered paragraphs, translated by me from the original Spanish letter of Dr. Diego Alvarez Chanca, addressed to the municipal authorities of the city of Seville, considered by competent judges to be a most remarkable document, and the best description of the first part of the second voyage of Christopher Columbus to America. I have added a few explanatory notes:

"Since the occurrences which I relate in private letters to other persons are not of such general interest as those which are contained in this epistle, I have resolved to give you a complete narrative of the events of our voyage, as well as to treat of other matters which form the subject of my petition to you. The news I have to communicate is as follows:

The expedition which their Catholic Majesties sent, by divine permission, from Spain to the Indies, under the command of Christopher Columbus, admiral of the ocean, left Cadiz on the twenty-fith day of September, in the year 1493, with wind and weather favorable for the voyage. This wind lasted two days, during which time we managed to make nearly fifty leagues. The weather then changing, we made little or no progress for the next two days; it pleased God, after this, to restore us fine weather, so that in two days more we reached the island of Great Canary. Here we put into harbor, which we were obliged to do to repair one of the ships that made a great deal of water. We remained all that day, and on the following set sail again, but were several times becalmed, so that four or five days more passed before we reached the island of Gomera. We had to remain at Gomera one day to lay in our stores of meat, wood, and as much water to drink as we could stow, preparatory for the long voyage that we expected to make without seeing land.[1] Thus it happened that through the delay at these two ports, and being calmed the day after leaving Gomera, we spent nineteen or twenty days before we arrived at the island of Ferro.[2]

After this we had, by the goodness of God, a return to fine weather, more continuous than any fleet ever enjoyed during so long a voyage; so that leaving Ferro on the thirteenth day of October, within twenty days we came in sight of land, but we should have seen it in fourteen or fifteen days if the ship *Capitana*[3] had been as good a sailer as the other vessels, for many times the others had to shorten sail because they were leaving us much behind. During all this time we had great fortune, for throughout the voyage we encountered no storm, with the exception of one on St. Simon's eve, which for four hours put us in considerable danger.[4]

On the first Sunday after All Saints' day, namely, the third of November, about dawn, a pilot of the *Capitana* cried out: "The reward, I see land!"[5] The joy of the people was so great, that it was wonderful to hear their cries and exclamations of pleasure; and they had good reason to be delighted, for they had become so wearied of bad living, and of working the water out of the leaky ships, that all sighed most anxiously for land. The pilots of the fleet reckoned on that day that between the time of leaving the island of Ferro and first reaching land, we had made 800 leagues;[6] others said 780, so that the difference was not great, and 300 more between Ferro and Cadiz, made in all 1,100 leagues.[7] I do not, therefore, feel now as one who had not seen enough water.

On the morning of the aforesaid Sunday we saw lying before us an island, and soon on the right hand another appeared. The first was high and mountainous on the side nearest to us; the other was flat and very thickly wooded. As soon as the light of day became brighter other islands began to appear on the right and on the left of us, so that that day there were six of them to be seen lying in different directions, and most of them of considerable size. . . .

---

[1] From that island of Gomera Columbus embarked eight pigs, bulls, cows and calves, sheep and goats, fowls and pigeons, seeds of oranges, lemons, bergamots, citrons, pomegranates, dates, grapes, olives, melons and other European fruits, as well as all kinds of orchard and garden vegetables. All these were the origin of their species in the New World. The expedition likewise carried implements of husbandry, shipped before leaving Spain.

[2] This is the southwesternmost of the group of the Canary Islands, formerly called the Fortunate Islands, and is named in Spanish *Hierro*.

[3] That vessel was a galleon of 400 tons' burden, that carried the admiral's flag, and in which Dr. Chanca made the trip.

[4] They believed themselves in much peril, as they certainly were in such a sudden and fierce storm, accompanied by heavy rain, rapid lightning and great peals of thunder, which are so frequent in the tropics, until they beheld several of those lambent flames called by sailors "St. Elmo's tapers," playing about the tops of the masts and gliding along the rigging, which are occasionally seen about tempest-tossed vessels during a highly electric state of the atmosphere. The sailors consider that phenomenon as of good omen.

[5] The Spanish government had offered a reward in money to the first person who would see land in this voyage.

[6] That is to say, 2,400 Spanish miles, or about 2,057 English miles.

[7] Three thousand three hundred Spanish miles, equivalent to about 2,829 English miles.

This island of Marigalante is filled with an astonishing thick growth of wood; that variety of trees being unknown to us, some bearing fruit and some others flowers. It was surprising to see that, and, indeed, every spot was covered with verdure.

We found there a tree whose leaf had the finest smell of cloves that I have ever met with. It was in shape like a laurel leaf, but not so large; I think it was really a species of laurel.[8] There were wild fruits of various kinds, some of which our men, not very prudently, tasted; and on only touching them with their tongues, their mouths and cheeks became swollen, and they suffered such a great heat and pain that they seemed by their actions as if they were crazy, and felt obliged to resort to cooling applications to ease the pain and discomfort.[9] . . .

These islanders appear to us to be more civilized than those those who had hitherto been seen before, for although all Indians have houses made of straw, yet the dwellings of these people are constructed in a much superior fashion, better stocked with provisions, and exhibit more evidence of industry, both on the part of the men and of the women. They had a considerable quantity of cotton, already spun and prepared for spinning, and many cotton blankets, so well woven as to be in no way inferior to similar ones made in our country.[10] . . .

We were able to distinguish which of the women were natives of these islands and which captives, by the distinction that a Caribbee woman wore on each leg two bands of rings of woven cotton, one fastened around the knee and the other around the ankle, by this means making the calves of their legs look big and the above-mentioned parts small, which I imagine they do because they believe this sort of adornment makes them pretty and graceful; by that peculiarity we distinguish them.

The captive women told us that the Caribbee men use them with such cruelty as would scarcely be believed; and that they eat the children which they bear to them, only bringing up those which they have by their native wives. Such of their male enemies as they can take away alive, they bring here to their homes to make a feast of them, and those who are killed in battle they eat up after the fighting is over. They claim the flesh of man is so good to eat that nothing like it can be compared to it in the world; and this is very evident, for of the human bones we found in their houses everything that could be gnawed had already been gnawed, so that nothing else remained of them but what was too hard to be eaten. In one of the houses we went in we found the neck of a man undergoing the process of cooking in a pot, preparatory for eating it.[11]

The habits of these Caribbees are beastly.

There are three islands: this one on which we are is called by the natives Turuqueira;[12] the other, which was the first we saw, is named Cayre,[13] and the third Ayay.[14] There is a general resemblance among the natives of these three islands, as if they were of the same lineage. They do no harm to one another, but each and all of them wage war against the inhabitants of other neighboring islands, and for this purpose sometimes they go as far as 150 leagues in their canoes,[15] which are a narrow kind of boats, each made out of a single trunk of a tree. Their arms are arrows, in place of iron weapons, and as they have no iron, some of them point their arrows with a sharpened piece of tortoise-shell, and others make their arrow heads of fish spines, which are naturally barbed like coarse saws. These arms are dangerous weapons only to naked people like the Indians, causing death or severe injury, but to men of our nation they are not much to be feared.[16] . . .

When the Caribbees take any boys as prisoners of war, they cut off their male organs, fatten them until they grow up to manhood and then, when they wish to make a great feast, they kill and eat them up, for they say the flesh of boys and women is not good to eat. Three of those boys thus mutilated came fleeing to us when the visited the houses.[17]

The difference between these Caribbees and the other Indians, with respect to dress, consists in wearing the hair very long, while the others have it clipt irregularly; also because they engrave in their heads innumerable cross-like marks and different devices, each according to his fancy; and they make those marks with sharpened bamboo sticks. All of them, both the Caribbee and the other Indians, are beardless, so that it is a marvellous thing to find one of these men with a beard. The Caribbees whom we have taken prisoners, have their eyes and eyebrows stained circularly around, which I think they do for ostentation, and also because it gives them a ferocious appearance. . . .

Here almost terminate the group of islands, which on the side toward Spain had not been seen before by the Admiral,[18] although we regard, as a matter of certainty, that there is land more than forty leagues beyond the southernmost of these newly-discovered islands.[19] We believe this to be the case, because two days before we saw the first island[20] we had observed some birds called "rabihorcados," which are marine birds of prey that do not sit nor sleep on the water, making circumvolutions high up in the air at the close of evening, with the object of taking their reckoning of where they are and flying after that in a straight line towards land to sleep.[21] These birds could not have been going to spend the night at more than twelve or fifteen leagues' distance from where they were, because it was already late in the evening, and the direction they took in their flight was toward the south. From all this we concluded there was land in that direction still undiscovered; but we did not go in search of it because it would have taken us out of our intended route. I hope that in a few more voyages it will be discovered.[22] . . .

---

[8] Probably it was the *Kalmia angustifolia* or "Laurier des Montagnes," as it is called in the French West India Islands.

[9] I believe those poisonous fruits were a species of small apple called in Spanish *manzanillo,* or in English manchineel tree (*Hippomane mancinella*), which is still to be found in the West India Islands. The fruit of the manchineel tree produces similar effects to those here described by Dr. Chanca, also vomiting and purging. The shadow cast by the foliage of this wild tree raises a blister on the skin, the same as the guao (*Rhus metopium*), which is a wild shrub, very abundant in the Antilles.

[10] The Caribbee Indians possessed also the art of making household utensils of clay, which they baked in kilns like the potters of Europe.

[11] Mr. Justin Winsor, the accomplished librarian of Harvard College, in his "Christopher Columbus," referring to the Caribbee Indians, makes the following interesting remarks: "The contiguity of these two races, the fierce Carib and the timid tribes of the more northern islands (the Lucayans) has long puzzled the ethnologist. Irving indulged in some rambling notions of the origin of the Carib, derived from observations of the early students of the obscure relations of the American peoples. Larger inquiries and more scientific observations since Irving's time have been given to the subject, still without bringing the question to recognizable bearings. The craniology of the Caribs is scantily known, and there is much yet to be divulged. The race in its purity has long been extinct. Lucien de Rosny in an anthropologic study of the Antilles published by the French Society of Ethnology in 1886, has amassed considerable data for future deductions."

[12] This was the island of Guadeloupe, named by Columbus *Nuestra Senora de la Guadalupe,* in remembrance of the famous sanctuary of Our Lady of Guadalupe, in the province of Extremadura, Spain.

[13] This was the island of Dominica, so called by Columbus from having been discovered on a Sunday (*Dies Dominica*). It is 29 miles long and 13 miles in its greatest breadth, situated at 15 degrees 25 minutes north latitude and 61 degrees 15 minutes west from Greenwich Observatory. It has an area of 291 square miles and belongs to England.

[14] This must have been the island now known as Martinique, though Dr. Chanca does not mention in his letter having been there. It is situated 30 miles south by west of the island of Dominica and 20 miles north of the island of St. Lucia.

[15] That is to say, 450 Spanish miles, or about 376 English miles, which means as far as Porto Rico, Santo Domingo and Cuba to the North, and Trinidad, Curaçao and the coast of South America to the South.

[16] Dr. Chanca did not know at that date that the arrow points of the Caribbees were poisoned with the juice of a plant, probably the inspissated sap of the manchineel tree.

[17] Herr Alexander von Humboldt, in his "Personal Narrative of Travels to the Equinoctial Regions of America," speaking about the Caribbees, makes the following instructive observations: "Reproaches addressed to the natives on the abominable practice which we here discuss, produce no effect; it is as if a Brahmin, traveling in Europe, were to reproach us with the habit of feeding on the flesh of animals. In the eyes of the Indian of the Guaisia, the Chernvichæna was a being entirely different from himself, and one whom he thought it was no more unjust to kill, than the jaguars of the forest. It was merely from a sense of propriety that, while he remained in the mission, he would eat only the same food as the fathers. The natives, if they return to their tribe (*irse al monte*), or find themselves pressed by hunger, soon resume their old habits of anthropophagy. And why should we be so much astonished at this inconstancy in the tribes of the Orinoco, when we are reminded, by terrible and well-ascertained examples, of what has passed among civilized nations in times of great scarcity? In Egypt, in the thirteenth century, the habit of eating human flesh pervaded all classes of society; extraordinary snares were spread for physicians in particular. They were called to attend persons who pretended to be sick, but who were only hungry; and it was not in order to be consulted, but devoured. An historian of great veracity, Abd-allatif, has related how a practice, which at first inspired dread and horror, soon occasioned not the slightest surprise."

[18] Dr. Chanca refers here to the island called by the aborigines Borinquen, which is the island we know to-day as Porto Rico, and named by Columbus San Juan Bautista (St. John the Baptist). The date of its discovery was Saturday, Nov. 16, 1493. There ended the Caribbee Islands, the first account of whose fierce and savage inhabitants was received with eager curiosity by the learned of Europe.

The country is very remarkable, and contains a vast number of large rivers and extensive chains of mountains, with broad, open valleys, and the mountains are very high. It does not look as if the grass is ever cut throughout the whole year. I do not think that they have any winter here, for at Christmas we found many bird-nests, some containing the young birds and the others the egg. No four-footed animal has ever been seen in this, nor in any of the other islands, except some dogs of various colors, as in our country, but in shape and size like lap-dogs. Of wild, ferocious beasts, there are none.[23]

I came near forgetting to mention another four-footed little animal, in the color of its hair, size, and fur, like a rabbit, but with long tail and feet similar to those of a rat.[24] These animals climb up the trees,[25] and many of our men who have eaten them say their taste is very good. There are many snakes, small in size, also lizards, but not so many, for the Indians consider them as great a luxury as we do pheasants. These lizards are of the same size as ours, but different in shape. In a small adjacent island, close by a harbor, which we named Monte Cristo, where we stayed several days,[26] our men saw an enormous kind of lizard, which they said was as large around the body as a calf, and the tail shaped like a lance.[27] They often went out to kill it, but bulky as it was it disappeared in the thicket and got into the sea, so that they could not catch it. . . .

There are, both in this and in the other islands, an infinite number of birds like those we have in our country, and many others, such as we had never seen. No kind of domestic fowl has been found here, with the exception of some ducks in the houses of the island Turuqueira. Those ducks were in size larger than the ones we have in Spain, though smaller than geese, very pretty, with flat crest, and most of them as white as snow, but some also black. . . .

Fish is abundant here, an article of food of which we were in great need, for our provision of meat was running short, and it is a singualr kind of fish, more wholesome than those we have in Spain. The climate does not allow the fish to be kept from one day to another, for all animal food speedily becomes unwholesome on account of the great heat and dampness. . . .

Large quantities of vegetables have been planted, and they certainly attain a more luxuriant growth in eight days here than they would in Spain in twenty.

We are frequently visited here by a great number of Indians, accompanied by their caciques, who are their captains or chiefs, and many women. They all come loaded with *ages*, a sort of turnip, very excellent food, which they cook and prepare in various ways. This food is very nutritious, and has proved of the greatest benefit to us all after the privations we endured when at sea, which in truth were more severe than man ever suffered. . . .

The little time that we have spent on land has been so much occupied in seeking a place to establish the settlement,[28] and in providing ourselves with things we needed,[29] that we have had little opportunity of becoming acquainted with the natural productions of the soil. In spite of this drawback, we have already seen many marvellous things. For instance: trees bearing wool, of a sufficiently fine quality (according to those who are acquainted with that industrial art) to be woven into good cloth.[30] And of this kind of tree there are so many, that we might load our vessels with wool, though it is somewhat difficult to gather it because these trees are very thorny, but some means can easily be found to overcome that difficulty.

There are also cotton trees as large as peach trees, which all the year round produce cotton, and in abundance.[31] We found trees which produce wax, as good both in color and smell as bees-wax, and equally useful for burning; indeed, with very little difference between the one and the other.[32] There is a vast number of trees which yield surprisingly fine turpentine.[33] Tar is found in abundance, of very good quality, too.[34] We discovered trees which, in my opinion, bear nutmegs, but at present without fruit on them, and I say so because the bark tastes and smells like nutmegs.[35] I saw one root of ginger, which an Indian was carrying around his neck.[36] There is aloes too, though not of the same kind as the one we are acquainted with in Spain, but, nevertheless, a species of aloes that we doctors use.[37] A sort of cinnamon has likewise been found, but, to speak truthfully, it is not of such a fine quality as the one we have in Spain; or, perhaps, this is so because now it is not the proper season to gather it, or the soil in which it was found growing in this vicinity is not well adapted.[38] We have also seen here some yellow mirabolans.[39] At this season they are lying under the trees, and as the ground is very damp they are all rotten, and have a very bitter taste, due, in my opinion, to their state of decomposition; but the flavor of those parts which in spite of that have remained sound, is the same as that of the genuine mirabolan. There is, besides, very good kind of mastic.[40] . . .

---

[19] It is truly admirable how nearly exact was this calculation of Dr. Chanca, for the comparatively large island of Trinidad, and the north coast of Venezuela, are about that distance from Martinique, the southernmost of those just discovered islands.

[20] The island of Dominica.

[21] They were frigate or man-o'-war birds (*Tachypetes aquila*), a peculiarity of which is that they persecute and compel the much larger marine birds, common pelicans (*Pelicanus onocrotalus*), to throw up what they have swallowed, and eat it themselves.

[22] And that land was in fact discovered, as predicted by the learned author of this important historical document, in the very next voyage of Columbus. On July 31, 1498, he discovered the island of Trinidad and caught a glimpse of *terra firma* at the delta of the Orinoco river.

[23] The cayman and the crocodile are the most dangerous animals found.

[24] This little animal is the *hutia* or *jutia*, as it is called in Spanish after its Indian name, a sort of mountain rat still plentiful in those islands. There are two distinct varieties: one, large in size, called *jutia conga* (*Capromys Fournieri*), and the other, small in size, named *jutia carabali* (*Capromys Poeyi*).

[25] The present poor country people of those islands roast and eat them the same as little pigs, and their taste is really good. During the recent struggle for independence in Cuba, the patriot soldiers were compelled, on account of the scarcity and poor quality of their armament, together with lack of ammunitions of war, to live in the woods, and there they killed almost all the jutias to provide themselves with food.

[26] This small island is called now Cabras or Goat Island.

[27] This big kind of lizard was nothing else but an alligator, which is the corrupted English word from the Spanish *el lagarto* (*Alligator lucius*).

[28] They found at last a convenient place, in the selection of which the professional advice of Dr. Chanca was duly consulted. It was on the shore of a good bay on the north coast, on high ground, with two rivers of potable water near by, and the back part well closed by the thick growth of an impassible forest that protected it from being set on fire by the Indians on a night attack. There in that spot was immediately commenced the building up of the very first Christian town of the New World, to which Columbus gave the appropriate name of Isabella, his great protectress. The ruins of the stone buildings in a solitary waste constitute to-day the melancholy relic of that historical locality.

[29] The principal of those things needed were fresh vegetables and fish, and the expeditionists soon got them. The vegetable gardens planted were speedily clothed in green, producing plentifully onions and pumpkins, radishes and beets. Sugar-cane, the first ever planted in American soil, and brought by those colonizers from the Canary Islands, had also been sown, and came up splendidly.

[30] The tree to which reference is made here is called *ceiba* in Spanish, *pojot* in the French West India islands, and "five-leaved silk-cotton-tree" in English (*Bombax ceiba*, Lin.). It grows to an immense size, is beautiful in appearance, and has its seeds enveloped in a cottony substance, light as feather, which fly in the air to a great distance.

[31] Probably the species known now as Sea Island cotton, still to be found wild in some localities in Cuba, Porto Rico and Santo Domingo. All varieties of *Gossypium* require a dry and sandy soil, and generally the plant flourishes most luxuriantly near the sea-coast.

[32] This tree is the wax-palm (*Ceroxylon andicola*), the stem of which is covered with a secretion consisting of two-thirds resin and one-third wax.

[33] One of those trees, besides the many varieties of pine-trees (genus *Pinus*), was called by the native Indians *hóbo* or *jóbo* (*Spondias lutea* or *Décandrie pentagynie*), which is the "mombain" with yellow fruit of the French botanists, a bulky tree belonging to the *Terebinthaceæ* family, very abundant in the Antilles and resembling somewhat the cedar.

[34] More correctly asphalt or mineral pitch, of which there are several lakes in the Antilles, notably the one in the island of Trinidad, about three miles in circumference.

[35] A species of *Myristica*, but certainly not the Myristica moschata of the Molucca islands. Probably it was the tree called by the aborigines *caumaná*, whose leaves have a smell like that of fennel, the bark a sweet taste, and in general appearance resembles the nutmeg tree.

In our present position, we are in the neighborhood of many mines of gold, not any one of which, we are told, is more than twenty or twenty-five leagues off. The Indians say that some of them are in Niti, a place in the possession of Caomabó, that Indian king who killed the Christians;[41] other mines are located in another place called Cibao, which, if it please God, we shall see with our own eyes before many days have passed; indeed, we should go there at once were it not because we have so many things to attend to that there are not enough men among us to do it at present. And this is in consequence of one-third of our people having fallen sick within four or five days after we landed here, which misfortune, I think, has happened principally on account of the toil and privations of the journey, to which must be added the variableness of the climate;[42] but I trust in our Lord to be able to restore all the sick to health.[43]

None of the natives of all these islands we have visited possess any iron. They have many implements, also hatchets and axes, all made of stone, which are so handsome and well finished that it is a wonder how they can contrive to make them without employing iron. . . .

Their principal food consists of a sort of bread made of the root of a herb, half way between a tree and grass,[44] and the *age*, which I have already described as being a kind of turnip, and a very good food certainly it is.[45] They use, to season it, a vegetable called *agi*,[46] which they also employ to give a sharp taste to the fish and such birds as they can manage to catch, of the infinite variety there are in this island, dishes, all of them, that they prepare in different ways. They have, besides, a kind of grain, in appearance like hazelnuts, very good to eat.[47] They eat all the snakes, lizards, spiders, and worms that they find on the ground, so that, according to my judgment, their bestiality is greater than that of any beast on the face of the earth. . . .

The admiral had, at one time, determined to leave the search for the mines until he had first dispatched the ships that were to return to Spain, on account of the great sickness which had prevailed among our men;[48] but afterward he resolved to send two detachments under the command of two captains, one to Cibao,[49] and the other to Niti,[50] places where, as I have already stated, Caonabó lived and ruled. These two detachments in effect departed, and one of them returned on the twentieth of the month, while the other did so on the following day. The party that went to Cibao saw gold in so many places that one scarcely dares to state the fact, for, in truth, they found it in more than fifty brooks and rivers, as well as on their banks; so that the captain said that anybody who wished to seek for gold throughout that province, would be sure to find as much as he wanted. He brought with him specimens from the different localities, that is to say, from the sand of the rivers and their banks.[51]

It is generally believed that by digging as we know how, the gold will be found in greater compact masses, for the Indians neither know how to dig nor have they any means of digging the ground more than to a hand's depth. The other captain who went to the place called Niti, returned likewise with news of a great quantity of gold found in three or four localities, of which he also brought some specimens with him.[52] Thus, surely, the King and Queen may henceforth regard themselves as the most prosperous and wealthy sovereigns on earth, because never yet, since the creation of this world, has such a thing been seen or read of. On the return of the ships on the next voyage, they certainly will be able to carry back such a quantity of gold as will fill with amazement all who hear of it.

Here I think I shall do well to break off my narrative. And I believe that those who do not know me, and hear of these things that I relate to you, may consider me prolix and somewhat an exaggerator, but God is witness that I have not exceeded by one iota the bounds of truth."

2164 Fifth Avenue.

EDITOR'S NOTE: Dr. Carl H. von Klein, Chicago, gives us the following additional information:

Dr. Chanca was appointed physician to Columbus' fleet on his second expedition by a dispatch of May 23, 1493. And on May 24 the chief accountants were instructed to pay him

---

36. Truly, this must have been the dry, wrinkled rhizome of the ginger-plant (*Zinziber officinalis*), so well known in Jamaica.

37. The species called Barbadoes aloes (*Aloes hepatica*), which is still considered of an inferior quality to *Aloes socotrina*.

38 That was probably the wild American cinnamon (*Nectandra cinnamoides*), or perhaps the white cinnamon of Winter (*Canella alba*).

39. They most likely were the fruit of the *Myrabolanus citrino* of Gartner.

40. A valuable resin exuding from the mastic-tree (*Pistacia lenticus*).

41 This Indian chief was a Caribbee by birth and ruled over the province of Hispaniola, called by the natives *Mangana*, in which were the mountains named Cibao. He was the cacique who killed the 38 men left by Columbus in that island on his return to Spain from his first voyage of discovery to America.

42. The climate suddenly changes in those West India islands from being very hot and dry to comparatively cool and very damp, due to long-continued and heavy rain.

43. Columbus himself was also sick with malarial fever for a few days, and seven months later suffered a dangerous malady, which I have ventured to diagnose as typhus or "ship fever" in my monograph on "The Medical History of Christopher Columbus," (which is the first and only one existing), read before the First Pan-American Medical Congress, held at Washington, D. C., in 1893, and published in the English language in THE JOURNAL A. M. A., May 5, 1894, and in the Dublin Jour. Med. Sci., August and September, 1894. It has also been published in other languages.

44. I think Dr. Chanca alludes here to the maize or Indian corn (*Zea mays*), of which the aborigines of Hayti made a kind of bread.

45. This farinaceous root is the *yuca*, called in English yucca or Adam's needle, also known as Barbadoes nut, a fibrous tuber, very esculent, of which there are in the West Indies two well-known kinds, the sweet (*Yucca gloriosa*) and the sour (*Yucca filamentosa*), this last one being cathartic and somewhat poisonous. It contains a large quantity of starch, which is obtained from the juice of the grated yucca, and from the fibrous residue is prepared the *casabe* or cassava (a corruption of the Spanish word) in the shape of very large, round and thin sort of crackers, called in Spanish *tortas de casabe*. This old kind of Indian bread is still made in Cuba, Porto Rico, Santo Domingo, etc., and is very much relished.

46. Red pepper, called *chili* in Mexico (*Capsicum frutescens*).

47. It was not a grain at all, but the palmiche (in Spanish), which is the small nut of the royal palm-tree, growing in bunches like the fruit of the date-palm. It is very much used in Cuba, Porto Rico, Santo Domingo and the other West India islands to fatten pigs with. Very likely the Indians ate it as food, and from that fact Dr. Chanca got his notion of its being a grain. Really, that nut looks like a small, green hazel-nut.

48. The expeditionists in great number were suffering from malarial fevers, about one-third of them, as Dr. Chanca states. That disease was in those days very little known, and much less its prevention and treatment. The miraculous *pulvis febrifugus orbis americani*, also called then with the names of "Jesuits' powders" and "Countess's powders" (*los polvos de la condesa*), were not yet known to Europeans. The existence, and the wonderfully curative virtue of the mysterious "quinquina" (a corruption of the indigenous Peruvian word *kina-kina*, which signifies "the bark" *par excellence*, and was the remedy that saved the lives of Charles II of England, Louis XIV of France, and Friedrich the Great of Germany, was then only known to the aborigines of the undiscovered kingdom of Peru.

49. In the Lucayan language that word meant "stone mountain."

50. The fertile valley later called by the Spaniards *La vega real*.

51. One of those specimens of gold was a nugget that weighed 9 ounces.

52. Those specimens of gold from the valley called Niti were fewer in number and of less value than the ones brought out from the mountains of Cibao. The captains of those two small detachments of Spanish soldiers were two brave young hidalgos, one named Alonso de Ojeda, who started with only fifteen soldiers, and the other, Ginés de Gorbalán, who was sent back to Spain by Columbus right after his return from this expedition to Niti, as a witness of the marvelous richness of Hispaniola. He took away with him to Spain the large nugget of gold weighing 9 ounces.

salary and rations as scrivener in the Indies. He became the physician of the colonies, for which Columbus credited him in his memorial to the monarchs as doing good service in his profession at a sacrifice of a large emolument which his practice brought to him in Seville. It is principally through Dr. Chanca that we have any history of Columbus' second voyage. He wrote a letter on the history of the voyage, which was sent by him to the Cathedral Chapter of Seville. The original is thought to be lost, but Navarrete in his "Historia de la Reyes Catolicos," in 1825, copied a transcript which belonged to a collection formed by Father Antonio de Aspa, a monk at the monastery of the Mejorada, where Columbus is known to have deposited some of his papers. The transcript is now in the Royal Academy of History, Madrid. Navarrete quotes a letter from Columbus to the king in reference to Dr. Chanca as it appears in a work entitled "Commentum in parabolis divi Arnoldi de Villanova ad illustris-simum, etc.," Sevilla, 1514, in fol. It read as follows:

"You will inform their Highnesses of the continual labor that Doctor Chanca has undergone, from the prodigious number of sick and the scarcity of provisions, and that, in spite of all this, he exhibits the greatest zeal and kindness in everything that relates to his profession. As their Highnesses have entrusted me with the charge of fixing the salary that is to be paid to him while out here (although it is certain that he neither receives, nor can receive anything from anyone, and does not receive anything from his position equal to what he did and could still do in Spain, where he lived peaceably and at ease, in a very different style from what he does here; and, although he declares that he earned more in Spain, exclusive of the pay which he received from their Highnesses), I have, nevertheless, not ventured to place to the credit of his account more than 50,000 maravedis per annum, as the sum which he is to receive for his yearly labor during the time of his stay in this country. I beg their Highnesses to give their sanction to this salary, exclusive of his maintenance while here; and I do so, because he asserts that all the medical men who attend their Highnesses in the royal yachts, or in any of their expeditions, are accustomed to receive by right the day's pay out of the annual salary of each individual. Let this be as it may, I am informed for certain, that on whatever service they are engaged, it is the custom to give them a certain fixed sum, settled at the will and by order of their Highnesses, as compensation for the said day's pay. You will, therefore, beg their Highnesses to decide this matter, as well with respect to the annual pay as to the above-mentioned usage, so that the said doctor may be reasonably satisfied."

The following reply was made to Columbus' letter: "Their Highnesses acknowledge the justice of Doctor Chanca's observations, and it is their wish that the Admiral shall pay him the sum which he has allowed him, exclusive of his fixed annual salary. With respect to the day's pay allowed to medical men it is not the custom to authorize them to receive it, except when they are in personal attendance on our Lord, the King." Nothing is known of the previous life of Dr. Chanca. The contribution of Dr. Ybarra will add a valuable page to the medical history of America.

Clinical Notes

INTRASACCULAR SUTURE OF ANEURISMS.

W. O. BULLOCK, Jr., M.D.
LEXINGTON, KY.

It is now four years since Matas, of New Orleans, gave to the profession the result of his reasoning and experience in the treatment of aneurisms. Proceeding on well-known grounds that serous surfaces, when brought together and held together will form adhesions, and that these adhesions in time become firm and unyielding, the intima of all vascular structures being made up of endothelium or rather lined with it, it was thought and subsequently proved by him that this membrane would behave in the same way as does the peritoneum, the adhesive properties of which enable the surgeon to perform many operations on the abdominal viscera which would otherwise be impossible. The chief question to be settled before the principle could be generally adopted was: Are the adhesions so formed strong enough to resist the blood pressure behind them? This point can only be settled by the combined experience of surgeons, and this is my reason for making this report.

My own experience with the operation of suture within the sac of the aneurism now includes four cases, three of which have already been made public.[1] A fourth case more fully reported herein completes my list. Before taking up the last one of my series, however, I shall review briefly my previously reported cases.

HISTORIES OF PREVIOUS CASES.

Case 1.—Traumatic fusiform aneurism of femoral artery.

Patient.—E. C., colored, aged 35.

History.—A wagon passed over the thigh in September, 1902, and symptoms began shortly afterward.

Operation.—The patient was operated on Feb. 23, 1903. A large aneurism of the femoral artery the size of a cocoanut was found. There were two openings in the bottom of the sac, separated by about an inch. The operation of intrasaccular occlusion was carried out step by step according to the original directions of the author of the method. No. 2 chromic gut sutures were used to close the vessels and for reinforcing sutures. There was a mild infection of the skin incision.

Postoperative History.—The leg and foot were warm and painless; there were no symptoms of impaired circulation. The patient was well fourteen months after operation.

Case 2.—Pathologic fusiform aneurism, popliteal artery.

Patient.—B. B., colored, aged 50, was a porter in a stove store and was accustomed to lift heavy weights.

History.—There was no definite history of injury. The first symptoms appeared eighteen months before operation.

Operation.—On June 4 the patient was operated on. The sac held about a quart of blood; the sac wall was thick and friable. There were two openings within the sac, separated by about an inch. The tourniquet broke during the operation and an extemporized tourniquet was made of the irrigator tube. The openings in the sac were closed by suture. The openings were on the outer wall of the sac nearer the superficial than the deep surface. A slight variation was necessary in the subsequent technic, due to the eccentric location of the vascular orifices.

Postoperative History.—The wound was dressed on the third day. Temperature was 104 and suppuration was profuse, coming from within the sac. Drainage was instituted and this gradually subsided. The wound healed in four weeks. There was no swelling or coldness or other symptom of impaired circulation in the leg or foot. This man is well to-day, never having had any trouble with his leg since leaving the hospital. Infection in this case was due to faulty sterilization after using the unsterilized irrigator tube.

Case 3.—Traumatico-pathologico-fusiform aneurism of the popliteal artery.

Patient.—W. B., colored, aged 34, a laborer, gave a history of syphilis. There was no distinct history of trauma. Tumor and pulsation were noticed three or four months before admission to the hospital.

Operation.—The Matas operation was performed July 29, 1904. The tumor was small, about the size of a goose egg. There were two openings on the inner wall of the sac, and these were sutured with No. 1 chromic catgut. The same variation as in Case 2 was used in this case. The sac wall was thick and friable in this case also.

Postoperative History.—The case ran an afebrile course. The wound healed by primary union. Some swelling of the leg persisted for two months after leaving the hospital. This patient is well to-day.

---

[1] Amer. Med., Aug. 29, 1903; Trans. Amer. Surg. Assoc., 1905. In a report by Dr. Matas.

HISTORY OF PRESENT CASE.

CASE 4.—Traumatico-pathologic aneurism, femoral artery.

Patient.—D. C., colored, aged 65, stated that during the Civil War he had syphilis. Arteries were moderately hard.

History of Aneurism.—He states that about a month before admission to the hospital he noticed a small lump, about the size of the end of his thumb, in the upper inner front part of his right thigh; he says that it was rather painful, but that it did not keep him from his work. He says also that there was no apparent increase in its size until one of his fellow workmen fell against his thigh; it then began to grow very rapidly and became very painful. This was about two weeks ago. Dec. 28, 1905, there was a large pulsating tumor, somewhat irregular in form, measuring 4x5 inches in its greatest diameters, the long diameter being transverse.

Jan. 8, 1906. The tumor was considerably enlarged since last examination; it consisted distinctly of two parts, divided by a slight, nearly vertical groove, the inner part being larger and more diffuse, the outer part more prominent. Approximate measurements at this time were: Longest vertical measurement, 4½ inches; longest transverse, 6½ inches.

Operation.—Jan. 8, 1906, an incision nearly vertical was made over constriction between masses of the tumor. The constriction was found to correspond to the inner border of the sartorius muscle. This was pulled aside, the sac incised and a quart or more of blood and fibrin turned out. The sac was cleansed and scrubbed. The sac walls were indefinite. Openings were sought and proximal opening was found at the upper end of the incision, hardly more than a quarter of an inch beneath the skin; it had been slightly cut in opening the sac. The intima had become detached from the middle coat and looked like a vein within the lumen of the artery, protruding slightly beyond it. An attempt was made to tie this separately, but the ligature cut through. The distal opening was found fully two and a half inches away from the proximal opening, lying slightly deeper, but presenting nothing unusual in appearance. The openings were then closed by chromic gut sutures and reinforced. On account of the openings being so superficial, the incision was greatly narrowed when these were closed. Approximation of the inner part of the sac was accomplished by retention sutures of chromic gut, four in number, passed from skin to sac, through floor of sac, back through the skin and tied over gauze pads. The outer part of the sac was not so treated, because of its small size and because I thought that compression from without would accomplish the desired result. Hemostasis was perfect. The incision was closed without drainage.

Postoperative History.—The patient's temperature and pulse were normal throughout. The wound was dressed on the seventh day and two or three drams of seropurulent fluid escaped. This was found to come from the outer part of the sac, or that part which had not been occluded by retention sutures. A gauze drain was inserted and the wound redressed daily, as the discharge in a few days had become entirely purulent. Twenty-one days after the operation the discharge had ceased and the wound healed. There was never any symptom of impaired circulation.

Feb. 22. 1906. Patient has been home three weeks and reports himself "well."

July 6, 1906. Patient is well.

DISCUSSION OF OPERATIVE PROCEDURES.

For convenience of consideration, it may be stated that the method of intrasaccular suture of aneurisms has developed three distinct procedures: 1. Intrasaccular occlusion, the Matas operation; 2. Intrasaccular repair; 3. Intrasaccular reconstruction.

1. Intrasaccular occlusion is, in most cases, the method of choice, being adapted to fusiform aneurisms or those presenting two openings within the sac, also to those sacculated aneurisms in which the single opening is very large. It is the method first employed by Matas and the method from which the other two are derived. The distinctive features of this operation consist in closing the mouths of the artery within the sac by means of closely placed catgut stitches, reinforcing the same by a Lembert suture embracing the walls of the sac, and finally, by bringing together all of the remaining sac wall and holding it together by means of retention sutures. This method has been so successful on the face of the returns that there seems but little excuse for any derivative operations except on theoretical grounds.

2. Intrasaccular repair, as its name would indicate, is the application of intrasaccular suture to the repair of the ruptured artery. It is applicable only to sacculated aneurisms, or to those presenting a single opening within the sac. It consists in closing the opening of the artery into the sac by means of Lembert sutures, and encroaching on the lumen of the vessel by utilizing the sac wall contiguous to the opening for this purpose.

This operation is applicable to both true and false aneurisms, and the record of five cases so treated without any of the usual unfavorable sequelæ would seem to show conclusively that this operation has a place in the treatment of aneurisms.

I mentioned false aneurisms because sacculated aneurisms of directly traumatic origin (gunshot wounds, stab wounds, etc.) belong usually to this class. Leave these cases alone, and if they do not bleed to death, the cells of the connective tissue confining the hematoma will take on endothelial characters and there will be formed an aneurismal sac, a false one it may be, but one that will adapt itself to plastic usages.

3. Intrasaccular reconstruction is the third procedure. In some cases of fusiform aneurisms, those having two openings within the sac, the advisability of attempting to restore the arterial wall was, and is still under consideration by some. In reporting my first case of aneurism treated by endoaneurismorrhaphy, I disapproved of such attempts on theoretical grounds. This adverse opinion has been strengthened by my further observation of the interiors of aneurisms and by the failures of attempts as reported by Matas, himself, in his collection. To my mind it is irrational to conceive that by sewing together the remains of a deceased, worn-out, broken-down vessel, one is going to get an artery. Follow the so-called successful cases and in all, unless as may happen, a thrombus forms at the site of the suture I predict recurrence sooner or later. The suggestion that reconstruction of the parent trunk in cases of fusiform aneurisms may be tried as a temporizing expedient. seems to me to be contraindicated, unless it be in cases of abdominal aneurisms; but even here I should prefer to occlude. I should not be surprised at any time to learn that the abdominal aorta had been successfully occluded by intrasaccular suture. I certainly believe that intrasaccular occlusion offers most to the victims of aneurism of the abdominal aorta. Again, as regards intrasaccular reconstruction, I regret that this method was ever suggested by the author of endoaneurismorrhaphy because the failures which are bound to follow the one will keep the other from at once occupying the place it deserves. Careless reviewing in the medical journals is responsible for many misconceptions as regards intrasaccular suture; a glaring example of such misunderstanding is to be found in an article[2] by O. von Frisch on the treatment of peripheral aneurisms, in which, after giving the results in nineteen cases operated on in the clinic of Professor von Eiselsberg, he divides the treatment into non-radical and radical. The Matas method is classed as non-radical and is disposed of thus:

---

[2] Archiv. f. klin. Chir., vol. lxxix, No. 2, 1906.

"Von den in neurer Zeit empfohlener Operationsmethoden verdient die von Matas angegebene, wonach die Gerinnsel aus dem Aneurisma entfernt werden und aus dem Rest des Sackes mit Catgutnaht ein neues Arterienrohr gebildet wird, durch das Bestreben die normalen Verhaltnisse wieder herzustellen, besondere Aufmerksamkeit."

The reviewer regards the method as irrational and unsafe. The report in itself is interesting as showing the results obtained by a single operator, employing methods other than intrasaccular suture, viz. ligation, or extirpation or some modification thereof. The number of cases treated was 19; gangrene occurred in 2 cases; local necrosis in 4; contraction of knee in 1; not heard from, 3; recurrence, 1; death, 1.

Compare this with the results obtained in thirty cases of aneurisms treated by sixteen surgeons employing the intrasaccular suture.[3] The number of cases treated was 30; 21 of these cases were treated by intrasaccular occlusion; 5 by intrasaccular repair; 4 by intrasaccular reconstruction.

Among the twenty-one cases of intrasaccular occlusion, there were no deaths from operation, no recurrence, no gangrene, and only one instance of local necrosis. Among the five cases of intrasaccular repair, there were no deaths from operation, no gangrene, no local necrosis, no recurrence. Among the four cases of intrasaccular reconstruction, there were no deaths from operation, no gangrene, or local necrosis, but there were two recurrences (one requiring amputation, the other a secondary intrasaccular occlusion).

These results speak for themselves. Of course, as cases multiply some failures are inevitable, but facts and figures seem to show that by means of intrasaccular suture they will be reduced to a minimum. In conclusion, I would say that I have found the method simple and easy of performance, and I intend to employ it in every case of operable aneurism I may have, outside of the chest, unless there be some positive contraindication.

ANEURISM: OPERATION, RECOVERY.

JAMES R. YOCOM, M.D.
TACOMA, WASH.

Patient.—F. M., aged 29, German by birth, left the U. S. Navy seven years ago and since then has worked as longshoreman and as tapman at the smelter.

History.—He gives a doubtful history of syphilis in 1898. In February, 1905, he was burned on the chest and face (first degree) and the right upper arm (second degree).

On St. Patrick's day, 1900, he had a row with the police in a dance house. He slipped and struck his left knee on the edge of a deep wooden gutter; slept in the police station on the cement floor (drunk), and the next morning his leg (back of the knee and calf), was "swollen as big as his thigh." He went to the hospital; there was no mark or bruise on the leg, but it was swollen from the back of the knee up to the back of the thigh, and remained so (in spite of massage and liniment) for nearly seven weeks. When he left the hospital at that time the general swelling had gone down, except for a "swelling about the size of a hazel nut," in the left popliteal space. It was stated that: "Now and then his leg hurt him a little, but he was apparently well except for the slight swelling."

Some time in the last of January, 1905, he noticed that his leg became a little stiff after sitting still and that the lump was growing more rapidly. It was then the size of a walnut. (Then he was burned, as stated above, and was in the hospital.) In September, 1905, the lump was decidedly bigger and he was in misery all the time—"could count the pulse beats in the swelling." The calf of the leg has always been a little larger since the injury five years ago—but since January, 1905, it has been decidedly larger, and is now much larger than the right, and especially when he walked it had a tired feeling, and he sometimes had to stop and rest.

Examination.—He was a well-built, well-nourished man, in good general physical health. A swelling back of the knee occupied the popliteal space, which bulged backward so as to make a smooth convex surface from side to side, instead of the normal scaphoid depression. The swelling pulsated in all directions synchronously with the pulse, and a well-marked bruit could be heard over it. The left leg below the knee was nearly one inch larger in circumference than the right, and he complained of the full tense feeling of this leg, particularly when he first goes to bed at night.

Operation.—Oct. 30, 1905, with the assistance of Drs. Green and McCreery, I operated on him at the Fanny C. Paddock Memorial Hospital at Tacoma. A tourniquet was placed around the left thigh, tightly enough to control the circulation, but it was thought better to pass a provisional loop around the popliteal artery at its origin; by drawing on this loop the pulsation could be stopped without help from the tourniquet.

I cut directly down on the aneurism sac (pushing the nerve to one side) and having thoroughly exposed it to view on the posterior surface, opened it from top to bottom, allowing some blood and some recent clots to escape. I then removed a considerable quantity of old, hardened fibrinous blood-clot which reinforced the wall of the sac proper, forming a dense, firm lining which was closely adherent to and separated with difficulty from the true wall. The sac, when thoroughly empty, was about as large as a duck egg, and showed very clearly on its deep surface two main openings from one and one-half to two inches apart, respectively, to the proximal and distal portions of the popliteal artery; there were also several other openings into branches. There was no difficulty in constructing an artery from the wall of the sac; no tube was used to secure the proper caliber. A full curved needle and continuous chromic No. 1 catgut suture was used.

After two rows of continuous suture had been placed, the assistant slacked up on the tension loop used to control the hemorrhage and allowed blood to flow through the newly made vessel; it leaked considerably between the stitches at the distal end, showing me where more stitches closely placed were needed. This was done, the circulation was tried again and found satisfactory. Perhaps had this test been made and the weak spots reinforced by other operators their results would have been satisfactory and permanent.

Instead of folding and refolding the superfluous parts of the wall of the sac to reinforce the suture line of the newly made artery, the redundant walls of the sac were sewed together by continuous layer sutures of catgut to secure extensive reinforcing approximation of the endothelial surfaces outside of the original suture line, being careful at the same time to close the openings of the smaller arterial branches passing from the sac. Loosening the control loop, which the assistant had held throughout the operation just tightly enough to prevent hemorrhage into the sac, pulsation was immediately felt, plainly and distinctly in the dorsalis pedis artery. The deeper wound was closed with tension sutures of silkworm gut and the skin by horse hair. The leg and thigh in full extension were enclosed in a voluminous cotton dressing with a snugly placed bandage and a long posterior splint.

Result.—There was an uninterrupted recovery and in three weeks the man walked out of the hospital; his only complaint was a swelling of the leg, which, though much less than before the operation, still persisted and appeared to be due to the varicose condition of some of the veins—due to the original obstruction from pressure of the aneurism.

Remarks.—Eight months after the operation the result of the operation was apparently perfect.

This Matas operation is remarkably simple and efficient—characteristic of the work of a master mind.

---

[3] Matas: Trans. Amer. Surg. Assoc., 1905.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

BROMIPIN.

TEN PER CENT. BROMINIZED SESAME OIL, MERCK.

Bromipin is a bromine addition product of sesame oil, containing 10 per cent. of bromine in organic combination.

It is prepared by the action of bromine chloride on sesame oil, in sufficient quantities, theoretically calculated, to produce the required brominization.

It is a yellow, oily liquid, having a purely oleaginous taste, and having a sp. gr. of 0.995 to 0.997.

If to 1 Cc. of bromipin in 10 Cc. of chloroform a few drops of phenolphthalein solution are added, the addition of one drop of half normal potassium hydroxide V. S. should produce a red color (limit of acidity). Estimation of bromine: 1 Gm. of bromipin is boiled with a solution of 2 Gm. of potassium hydroxide in 10 Cc. of alcohol until saponified. The solution is evaporated on a water bath, the residue is charred and the char is repeatedly extracted with small portions of water, and these are passed through a filter. To the filtrate 5 Cc. of nitric acid, 15 Cc. of tenth-normal silver nitrate V. S. and 1 Cc. ferric-ammonium sulphate test solution are added and the excess of silver nitrate is determined with tenth-normal ammonium sulphocyanate V. S. 1 Cc. tenth-normal silver nitrate = 0.007936 Gm. of bromine.

Actions and Uses.—Bromipin acts like the bromides, but as it yields its bromine more slowly it is thought to have less tendency to produce brominism. The combination is not broken up in the stomach, but a portion of the bromine is split off as soon as the oil enters the intestine. The oil with the remaining bromine is easily absorbed, and, similarly to other fats, is largely deposited in the tissues, where it is slowly split up. It is said to be more lasting in its action than the bromides.

Dosage.—4 Cc. (1 fluidram), increased in cases of epilepsy to from 8 to 32 Cc. (2 to 8 fluidrams); in emulsion with peppermint water and syrup, or pure, flavored with oil of peppermint.

Manufactured by E. Merck, Darmstadt. (Merck & Co., New York). German patent No. 96,495.

BROMIPIN—33 1-3 PER CENT.

A 33 1-3 per cent. brominized sesame oil.

This preparation is also offered in capsules containing each 2 Gm., and as tablets of bromipin (bromipin solidum saccaratum) containing 1.2 Gm. of 33 1/3 per cent. brominized sesame oil, corresponding in bromine content to a teaspoonful of bromipin 10 per cent.

Manufactured by E. Merck, Darmstadt. (Merck & Co., New York). U. S. patent No. 774,224; German patent, No. 150,763.

BUTYL-CHLORAL HYDRATE.

TRICHLORBUTYLIDENE GLYCOL. CROTON CHLORAL HYDRATE. CHLORAL BUTYLICUM.

This compound, $CH_3.CHCl.CCl_2.CH(OH)_2 = C_4H_7O_2Cl_3$, is official in the British Pharmacopeia as Butylchloral Hydras.

Actions and Uses.—Its action is similar to that of chloral, except that it is said to be less depressing and more analgetic. It has been especially recommended for facial neuralgia.

Dosage.—0.3 to 1.3 Gm. (5 to 20 grains).

CALCIUM ICHTHYOL.

A derivative of ichthyol in which calcium is substituted for ammonium.

It is a brown, tasteless powder, insoluble in water, and containing 2.5 per cent. of calcium.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York).

CALOMELOL.

COLLOIDAL CALOMEL.

A soluble colloidal form of calomel, containing albuminoids.

According to the patent it is prepared by acting on a solution of sodium chloride in presence of a proteid with mercurous nitrate and precipitating the water soluble colloidal calomel by means of alcohol. The precipitate is washed with alcohol, redissolved in water with the aid of a little alkali, and from this *solution the colloidal calomel is obtained either by evaporation* or by precipitation with alcohol.

It forms a white-gray, odorless and tasteless powder, containing 80 per cent. of mercurous chloride and 20 per cent. of proteids. It is soluble in water, forming an opalescent solution; insoluble in alcohol, ether and benzene. It is precipitated from its aqueous solutions by acids, the precipitate being redissolved by alkalies.

It is incompatible with soluble hydroxides, carbonates, iodides, oxidizing agents, etc.

Actions and Uses.—Its action is the same as that of calomel, but it is claimed to be superior because of its solubility in water, acting more rapidly and efficiently. Calomelol is claimed to be non-irritant and particularly non-toxic. The indications for its use are the same as for calomel.

Dosage.—Internally the same as calomel. Externally it is used as a dusting powder, mixed with an equal quantity of starch or of a mixture of starch and zinc oxide, or in the form of calomelol ointment. It should be guarded from the light.

Manufactured by The Heyden Chemical Works, New York. U. S. patent No. 740,855. U. S. trademark.

CALOMELOL OINTMENT.

An ointment containing 28 per cent. of mercury in the soluble form of calomelol (which see) and 2 per cent. in the insoluble form.

It is prepared by combining 45 parts of calomelol with sufficient lard to make 100 parts.

Actions and Uses.—It is a substitute for mercurial ointment, over which it has the advantage of cleanliness, and it is claimed to be distinctly superior as an inunction in syphilis, etc.

Dosage.—6 Gm. (90 grains) daily for inunction in syphilis.

Manufactured by The Heyden Chemical Works, New York. U. S patent No. 740,855.

CASCARA EVACUANT.

A preparation said to contain a bitterless glucoside, obtained from the bark of *Rhamnus purshiana,* with aromatics.

The bark, which has been stored two years or more, is exhausted with water, the liquid extract concentrated, and the bitter glucosidal substances removed, leaving the bitterless principles which constitute the active ingredients of the preparation.

It is a dark red brown liquid, with an odor and taste suggesting licorice, it being slightly and persistently, but not unpleasantly, *bitter.*

The glucosidal nature may be shown by the following: If precipitated from the aqueous alkaline solution by acids and redissolved in water it does not reduce Fehling's solution, but if redissolved in water, boiled with an acid and neutralized, it reduces that reagent. The glucoside is soluble in water, slightly soluble in alcohol, insoluble in ethyl acetate, chloroform, ether, benzol and benzin. The aqueous solution is colored red by alkalies, the alkaline solution may be partially precipitated by acids. Solution of lead subacetate precipitates the glucoside from its aqueous solution.

Actions and Uses.—It is claimed that this preparation possesses the laxative properties of cascara sagrada without the bitterness which characterizes the ordinary extract. It is recommended for the treatment of chronic constipation, for which cascara sagrada is one of the best medicinal agents.

Dosage.—As a laxative, 0.6 to 1 Cc. (10 to 15 minims) three times a day; as a purgative, 1.3 to 2 Cc. (20 to 30 minims) morning and evening. 4 Cc. (1 fluidram) may be given in obstinate cases.

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

CASCARA TONIC LAXATIVE GLOBULES

Each globule is said to contain 0.2 Gm. (30 grains) of the bitter glucosides of *Rhamnus Purshiana* suspended in a bland fixed oil, to which aromatics have been added.

The bark of *Rhamnus Purshiana*, stored not less than two years, is exhausted with water, the liquid evaporated and the extract treated with a solvent which extracts the bitter glucosides, which are mixed with a fixed oil and dispensed in capsules.

The capsules are nearly black in color and contain a fixed oil in which the extract is partly suspended, partly precipitated as a sticky, black extract of an intensely and persistently bitter taste. The odor is fragrant.

The fixed oil may be removed by ether in which the glucosidal bodies are almost insoluble, and the nature of the latter may be tested as follows: Its hydro-alcoholic solution does not reduce Fehling's solution at once, but after boiling the precipitated glucosides with dilute acids and neutralizing, the resulting product does reduce that reagent.

The aqueous solution is colored purplish red by alkalies; from the alkaline solution a yellow substance is precipitated by acids. Solution of lead subacetate precipitates the glucoside from its aqueous solution. The glucosides are partially soluble in water, ethyl acetate, and in 25 per cent. alcohol, entirely soluble in alcohol of from 50 to 80 per cent. by volume, only slightly soluble in chloroform, ether, benzene or petroleum benzin.

Actions and Uses.—The manufacturers claim that it combines the laxative action of cascara with tonic properties of the bitter principle with the advantage of concealment of the disagreeable taste.

Dosage.—One or two globules to be taken before retiring.

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

CHINAPHENIN.

PHENETIDIN QUININECARBONIC ACID ESTER.

Chinaphenin, $CO(NH.C_6H_4OC_2H_5)(C_{20}H_{23}N_2O_2) = C_{29}H_{33}N_3O_4$, is the quinine carbonic acid ester of phenetidin.

It is prepared by the action of quinine on p-ethoxyphenyl carbamic acid chloride.

It is a white, odorless and tasteless powder, difficultly soluble in water, but readily soluble in alcohol, ether, chloroform, benzene. Acids dissolve it with the formation of soluble salts.

It gives the thalleioquin reaction for quinine salts, but forms a yellow herapathite.

It is decomposed by acids with the liberation of quinine.

Actions and Uses.—Chinaphenin combines the antiperiodic properties of quinine with the analgesic power of phenacetin, with the advantage of tastelessness and asserted freedom from symptoms of cinchonism produced by the administration of the two remedies in simple mixture. It is recommended in febrile diseases, especially la grippe; in spasmodic conditions, such as whooping-cough; in certain forms of malaria and in neuralgia.

Dosage.—Adult: 0.3 to 0.6 Gm. (5 to 10 grains) ordinarily, or 1.5 to 2 Gm. (22 to 30 grains), given in two doses as an antipyretic in neuralgia and malaria; in whooping-cough, 0.13 to 0.3 Gm. (2 to 5 grains), according to age.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 637,839. Vereinigte Chininfabriken. Zimmer & Co., Frankfurt a. M. German patent No. 109,259.

CHLORBUTANOL.

TRICHLOR-TERTIARY-BUTYLALCOHOL. ACETONE-CHLOROFORM.

Chlorbutanol is 1,1,1-trichlor-2-methyl-propan-2-ol, $CCl_3.C(OH)(CH_3).CH_3 = C_4H_7OCl_3$, produced by the reaction of acetone on chloroform.

Made by the action of caustic alkalies on a mixture of chloroform and acetone. It is a white, crystalline, volatile compound having a camphoraceous odor and taste. It is soluble in water (8-1000), in oils, and glycerin; very soluble in alcohol, ether, benzin, glacial acetic acid, chloroform and acetone.

Actions and Uses.—It is said to be absorbed unchanged, but to be decomposed in the body. It is a local anesthetic with an action weaker than that of cocaine, but sufficient to prevent vomiting from gastric irritation. Its antiseptic action is said to be fifteen times as strong as that of boric acid. It acts on the central nervous system similarly to chloral, and although the claim has been made that hypnotic doses are without effect on the circulation and respiration, independent observers have described a fall of blood pressure and interference with respiration in animals, and consider it fully as dangerous as chloral. In man 100 grains caused severe symptoms, but recovery occurred. It is claimed that no habit is induced, but this may be referable to its restricted employment. It is recommended as a mild local anesthetic, in dentistry, etc., as a preservative for hypodermic solutions, for insomnia, vomiting, and for spasmodic conditions. It is also said to be useful as introductory to general anesthesia, lessening excitement and nausea.

Dosage.—The dose is from 0.3 to 1.5 Gm. (5 to 20 grains) dry or in capsules. Hypodermically as a local anesthetic a saturated aqueous solution may be used.

CHLORETONE.

A name applied to chlorbutanol, which see.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

CHLORETONE INHALANT.

Chloretone (chlorbutanol), 1 Gm.; camphor, 2.5 Gm.; menthol, 2.5 Gm.; oil of cinnamon, 0.5 Gm.; refined liquid petroleum, 93.5 Gm.

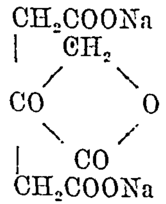
Actions and Uses.—An anodyne, antiseptic, and emollient solution for use by inhalation as a very fine spray or nebula.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

CITARIN.

SODIUM ANHYDROMETHYLENE CITRATE.

Citarin,



$= Na_2C_7H_6O_7$, is the normal sodium salt of anhydromethylene-citric acid.

Anhydromethylene-citric acid is obtained by reacting on citric acid with paraformaldehyde (Schering, German patent 129,255) or with chlormethyl alcohol, CH_2ClOH (German patent 150,949). The sodium salt is obtained by treating the acid with sodium hydroxide solution and precipitating the resulting salt with alcohol (U. S. patent 715,329).

It is a white, granular, somewhat hygroscopic powder, having a faintly saline and acidulous taste, and a slightly acid reaction. It is readily soluble in about 1.5 parts of water, but insoluble in alcohol. Its solutions split off formaldehyde when heated, particularly in the presence of alkalies, and mineral acids separate from its concentrated solutions methylenecitric acid.

Formaldehyde can be demonstrated by means of Jorrisson's reaction, or by sodium nitrite and sulphuric acid, or by silver nitrate and soda solution.

It is incompatible with acids and alkalies and is decomposed by heat.

Actions and Uses.—This is one of the compounds which it is claimed increase the elimination of uric acid by forming very soluble compounds with that substance. It has been recommended for gout and chronic rheumatism.

Dosage.—1 to 2 Gm. (15 to 30 grains), largely diluted with water.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 715,239.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.........Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, SEPTEMBER 29, 1906.

HYPERSUSCEPTIBILITY AND TRANSMITTED IMMUNITY.

The valuable paper of Rosenau and Anderson on hypersusceptibility, which was presented at the recent session of the American Medical Association in Boston, and of which the authors' abstract appears in this issue, calls fresh attention to a most important "immunity reaction." We are all familiar with the occasional examples of individual and family hypersusceptibility which may be manifested against many drugs and certain infections. This is a natural hypersusceptibility. Since the time of Koch, however, facts concerning a peculiar acquired hypersusceptibility have been gradually accumulating.

The tuberculous individual, for unknown reasons, acquires a delicate susceptibility to an injection of tuberculin which the non-tuberculous does not possess. Experience in the immunization of animals with toxins and bacteria has brought to light other examples in which the immunizing process resulted in heightened susceptibility to the substance injected, rather than immunity. Animals which have endured prolonged immunization with tetanus or diphtheria toxin may suddenly prove intolerant to further immunization even with small doses, and death is not uncommonly the result of this acquired susceptibility. The seemingly paradoxical fact that liberal amounts of antitoxin may be present in the serum of such animals has furnished the subject of immunity with one of its knottiest problems. Behring described the condition as one of "histogenous hypersusceptibility" which manifested itself in spite of the presence of antitoxin in the blood. Wassermann explained it by the assumption that the immunization brings about a heightened "avidity" on the part of the cell receptors for the toxin, which is so great that the toxin combines with the cells rather than with the antitoxin which is present in the blood of the animal. Other examples of a similar character are known.

The hypersusceptibility which forms the subject of the paper by Rosenau and Anderson may or may not be identical in principle with that alluded to above. It is all the more striking in this respect, at least, that it involves an acquired susceptibility to a substance, horse serum, which in itself on first injection appears to be non-toxic. It seems to have been the experience of a number of investigators that animals do not stand prolonged immunization with various albuminous substances, although the latter have little or no toxicity when injected in single large doses. It is probable that the many fatalities which occur in the attempt to produce immune cytotoxic serums depend on a similar principle. Arthus, in 1903 (*Société de Biologie*) published observations showing the toxicity of repeated injections of horse serum into the rabbit. Pirquet and Schick had shown also the toxicity of a second injection of antitoxin or horse serum in relation to the "serum disease." It is learned from a recent publication by Otto[1] that Theobald Smith had noted the frequent toxicity of a second injection of horse serum as early as 1902, and it was through the suggestion of Smith that Otto undertook a study of the subject. That Smith's attention had been called to the phenomenon was also brought out in the discussion which followed the reading of the paper. This fact would seem to detract nothing from the originality of the work of Rosenau and Anderson, however, since they apparently encountered the phenomenon independently.

The results obtained by Rosenau and Anderson coincide in all essential respects with those of Otto. A study of the details of their experiments[2] indicates the thoroughness with which the work was conducted, and their conclusions are based on a very extensive material.

The phenomenon has a direct and important bearing on the serum disease of Pirquet and Schick, and throws probable light on the disturbing results which occasionally (rarely) follow the administration of antitoxin in man. They prove conclusively, as does Otto, that the untoward effects which may be caused by an antitoxic serum are absolutely independent of the antitoxin which the serum contains.

It is probable that a satisfactory explanation of the phenomenon has not yet been reached. That the hypersusceptibility is "histogenous" was demonstrated by Rosenau and Anderson; it is not a property which resides in the serum of the animals. The explanation offered by Vaughan in this discussion is interesting, but is difficult of proof.

The work is important not only because of its bearing on serum intoxication, but also because of its relation to the general subject of hypersusceptibility to infectious diseases. It is probable that the phenomenon, which seems destined to be known as the Theobald Smith phenomenon, in pursuance of the precedent set by Otto, will prove to be another instance in which a problem of primary theoretical interest may yield results of great practical value.

Other important work from the Hygienic Laboratory of the U. S. Public Health and Marine-Hospital Service is found in the last bulletin, just issued.[3] In this bulletin Anderson confirms the work of some previous observers (Wernicke and others) concerning the ability of the female guinea-pig to transmit an original immunity to diphtheria to her offspring. In the experiments conducted by Anderson, the surprising observation was made that a guinea-pig which had been treated with a mixture of diphtheria toxin and antitoxin transmitted distinct immunity to her offspring, whereas animals which had been treated with the toxin alone transmitted no such immunity. This seems not to have been explained satisfactorily as yet. The transmitted immunity appeared in each of four successive litters, but was not passed into the third generation.

---

[1] Das Theobald Smithsche Phänomenon der Serum Ueberempfindlichkeit, v. Leuthold Gedenkschrift, vol. 1.

[2] Bulletin 29 of the Hygienic Laboratory, U. S. P. H. and M. H. Service.

Emphasis is placed on the importance of this transmitted immunity, as well as on the transmitted hypersusceptibility to serum (Rosenau and Anderson) in the testing of toxins and antitoxins by manufacturers of serums. The value of an antitoxin may be greatly overestimated, on the one hand, by testing it on a guinea-pig which has inherited an immunity to diphtheria from its mother; on the other hand, the results of the tests for bacterial or toxic impurities may be equally erroneous if they are performed on guinea-pigs which have inherited a fatal susceptibility to serum from a "used" mother.

It is worthy of comment that the government, in maintaining laboratories for practical purposes, has found it necessary to place these laboratories under the direction of men who have the investigative spirit, and to encourage this spirit by providing facilities for pure research. Experience has taught well the lesson that the practical when thoroughly divorced from the theoretical ceases to be practical.

A NATIONAL DEPARTMENT OF HEALTH.

The government is designed for the welfare of the people, and in a government like ours, of the whole people, one of the first considerations in the people's welfare is their health; material resources are secondary. Without an able-bodied race, no country can prosper, and it is the favoring health conditions of the temperate zones that have made the races inhabiting them the rulers of the world. With the artificial conditions of civilization, however, the problem of the public health comes more and more to the front, and the old *laissez faire* methods show their deficiencies. More than one country at the present time is seeking methods and means to check the degenerative tendencies that threaten them, and the question whether our civilization is to last seems largely to depend on the success of these efforts.

The paper of Professor Norton, published in this issue of The Journal, puts forth the economic side of the question as fully and fairly as any publication of its compass that has lately appeared. Coming from a nonmedical man, it is an encouraging sign. Professor Norton shows how great a waste exists at the present time from preventable deaths, sickness and conditions of physical and mental inefficiency, due largely to the lack of a wise general governmental supervision. We have our pure food laws and our quarantine laws which go a certain way toward checking these evils, but they are, after all, only a beginning of what is needful. We have a great deal of government in regard to health matters, but it is local, unsystematized and often conflicting in different sections of the country and is distributed also, so far as it relates to national affairs, under different departments of the government, thus preventing the best results. The plea for a national department of health could be, to a certain extent, met by the consolidation under a single head of already existing bureaus without a great additional expense, but completeness and full efficiency would demand more than this.

The plan laid out by Professor Norton covers a much broader field, and, while it may not be absolutely realizable at once, the consolidation of the existing bureaus would be a great step in advance and could be enlarged on as wisdom and experience would dictate. The work done on less than a million and a half by the Public Health and Marine-Hospital Service is itself an indication of what a wise expenditure of only a moderate amount of public funds can accomplish. The protection of our southern coast from yellow fever, which it has practically accomplished, is worth annually many times the whole cost of that department, but this is a local service which principally benefits a section and not the whole country. An intelligent direction of health matters, including far more than that bureau at present has under its control, would be of still more widespread and general advantage. A considerable amount of the work done under the Agricultural Department, which is of the utmost value, including, for example, the admirable work of Dr. Wiley and that now assigned it under the pure food law, should properly be consolidated with the sanitary functions of other departments. Then a cabinet officer with expert knowledge of health matters could administer all these and other new departments to much better advantage than under the present system.

The value of an intelligent health administration to the power of the nation in war was never better exemplified than in the recent Russo-Japanese war, and the victories of peace are likewise dependent on the preservation of the national health efficiency. It is not only the man behind the gun, but the man behind everything else tending to national prosperity that counts, and the sound mind in the sound body is a real element in national as well as individual prosperity. How far criminality is concerned with disease is an important social question, and we know what the tendencies of certain sociological thinkers are on this matter. Leaving all extreme ideas aside, there is no question but that a healthy people, other things being equal, is more amenable to moral improvement than one in whom disease conditions prevail. A department of health, exercising a wise supervision over all subjects of national bodily welfare, could thus indirectly, at least, be a valuable adjunct to good government.

---

[3] Maternal Transmission of Immunity to Diphtheria Toxin and Hypersusceptibility to Horse Serum in the Same Individual. Bulletin 30, Hygienic Laboratory, U. S. P. H. and M. H. Service.

The importance of health matters to any civilized country is greatly enlarged at the present time by the vastly increased facilities for communication, and sanitary questions of international importance are constantly arising. The importance of the office is still further magnified and its necessity as a special department with a cabinet officer at its head is strongly accented by the international complications arising involving sanitary questions of the highest importance. Moreover, as this country becomes more and more a world power the scope of such a department is greatly widened. For these, in addition to the economic reasons so well stated by Professor Norton, the advisability of such a department is all the more obvious. We can hardly add to the economic argument so well stated in the article, excepting by emphasizing the important truth that what is right is also profitable. Righteousness exalteth a nation, and governmental attention to the physical salvation of the people is, if anything else is, in the line of practical and political righteousness.

THE AMERICAN MEDICAL DIRECTORY—A PRELIMINARY STATEMENT.

One of the apparently new lines of work inaugurated by the American Medical Association is the compilation and publication of a Medical Directory, based on material drawn from the official records of the various state licensing boards. We say "apparently" advisedly, for this feature of the Association's activity is only an extension of a work in which it has always been interested, namely, the elevation of the personnel of the profession and the safeguarding of the public health through the elimination of those who, either on account of lack of proper training, or owing to deficient mental or moral endowment, are unfit to practice medicine. Almost from the time of its organization the Association has striven for the accomplishment of these ends.[1] It has repeatedly declared in favor of the state laws regulating the practice of medicine and establishing examining and licensing boards. It has always favored the enforcement of these laws.

The practice of medicine in a civilized community is something more than the pursuit of a private business or calling. As Huxley showed, the physician bears a peculiar relation to the state, which justifies the civil government in demanding a certain amount of preparation and a demonstration of fitness from each candidate before allowing him to practice medicine. This principle, comparatively new in Huxley's day, is now universally recognized. Each state and territory now has a law establishing and maintaining a board for this purpose. No one is allowed to assume responsibility for the lives and health of the public, unless he is first granted a license by a board of the state in which he desires to practice. This law is of benefit to the profession by keeping the unfit out of its ranks; it is of much greater benefit to the public by protecting it against the untrained and the unprincipled.

The regulation and protection of public health is one of the police powers reserved by the constitution to the state. Each board, therefore, has jurisdiction only over the territory of the state which created it. Any coöperation between state boards is, necessarily, purely voluntary. It is to the interest of the public as well as of the profession that there be as much uniformity as possible in the standards of these boards and that each be cognizant of the work of the others. Our state laws regulating medical practice are, to-day, an absolute necessity. It will also be conceded that state licensing boards have wrought a marked improvement in the medical profession and have also been of great benefit to the public. The need of to-day, however, is closer relation, more coöperation and greater uniformity among the state boards. Such coöperation must be voluntary and can only be brought about by demonstrating the value which each board can be to the others. Since the work of the licensing body is the acceptance of the fit and the rejection of the unfit, the greatest service which any board can render is to share with the other boards the knowledge and experience it has gained, regarding those whom it has accepted or rejected. Some attempts have been made along this line. Of 70 licensing bodies, 22 have published, at different times, a list of those licensed to practice in their state. Some of these reports are excellent and are a credit to the boards issuing them; but their circulation usually has been confined to the states which issued them and to members of other boards to whom they have been sent. In some cases, they have been buried in the annual reports of the board. With a few exceptions, they have been published at long intervals and the various editions have not been accessible to the public nor, in many cases, to the profession. With limited means and large responsibilities, the average board is not able to expend much money in revising or printing its records.

Now, a law is of no value unless it can be enforced. It can not be enforced unless it is possible to detect violations of it. There must, therefore, be some ready means of ascertaining whether or not a given physician has complied with the law. In some states, it is practically impossible to determine this point; in many more, it is difficult and expensive. In most states, in order to ascertain the legal standing of a physician, it is necessary to write to, or to call on, the secretary of the state board. In a number of states, even this would not suffice, since the records are kept by the various county clerks. In one state, there are 67 counties, each with its separate register of licensed physicians. In one of these counties, there are over 7,000 names on the records; in another county there are over 3,000. These names are entered in the order in which the applications were made, without alphabetical arrangement or index. To determine positively, whether or not a physician is licensed to practice medicine in this state might require the examination of every name on the 67 county records. Such an amount of work makes the enforcement of the law impossible. In another state, where, previous to 1890, a similar system of registration was in force, it would be necessary to examine the records of the state board, which only go back to 1890, and then to examine the records of each of the 22 counties in the state. Who is responsible for the enforcement of the registration law in states which depend on county officials for their records of medical practitioners? The county clerk is supposed to be, but his sole interest is the collection of a fee for each license which he registers. Since it can not be proved that a given individual has violated the law, it is manifestly impossible to convict him.

---

[1] Dr. Bartles introduced the following resolution: "Resolved, That the union of the business of teaching and licensing in the same hands is wrong in principle and liable to great abuse in practice. Instead of conferring the right to license on medical colleges, and state and county medical societies, it should be restricted to one board in each state, composed in fair proportion of representatives from its medical colleges and the profession at large, and the pay for whose services as examiners should in no degree depend on the number licensed by them."—Proceedings A. M. A., May 5, 1846, vol. i, p. 19.

The weak point in our system of medical legislation is that each state is a separate unit, keeping its own records, issuing its own licenses and publishing its own roster, if it does so, without any reference to other states. It has been recognized that immense good would result if all the information collected by the various state boards could be properly arranged and placed at the disposal of all of the boards, to be used for the benefit of the profession and the public. But there has been no systematic effort made to inaugurate such a work. It is evident that it is fundamental and that it must eventually be done by some one. It is obviously unreasonable to expect any one state board to assume the labor and expense of this work. It is equally out of the question to expect the general government to undertake it. It is too expensive and unremunerative for private enterprise. The medical profession itself, therefore, is the only agent left to undertake it. It has hitherto been impossible for the profession to undertake this task, owing to the lack of funds and incomplete organization. These two obstacles having been removed by the work of the past few years, it was decided at the Portland session that the time had come for the organized profession to take up this needed reform.

Accordingly, in September, 1905, correspondence was entered into with the secretary of each licensing board; the objects of the Association were clearly set forth; the advantages which would accrue to each board were explained and the coöperation of each board was requested. Without exception, this was given cheerfully and willingly. Complete copies of the official records of the board, containing the names of all physicians licensed to practice medicine, were obtained. These names were properly arranged and indexed. In states having a county system of registration, it was necessary to secure copies of the records from each county clerk. This work showed clearly the great need of a reform such as the Association had undertaken. Almost without exception, those records which were kept by county clerks or by lay officials were found to be in a deplorable condition of inaccuracy and incompleteness. In some cases, obtaining the desired information entailed much labor and expense and required much patience. Eventually, however, complete copies of the records of all licensing or registering bodies were secured. At the same time, arrangements were made by which these records are kept corrected up to date, through reports furnished by the secretary of each board, following examinations.

Arrangements are also being made by which each secretary will send to this department information regarding physicians whose licenses have been revoked or who have attempted to deceive the board by means of false statements or by forged or altered diplomas or credentials. This matter will be distributed to each board by the Association. In this way, each board will profit by the experiences of all.

Turning now to the medical colleges, we find a condition similar to that which obtains among registering boards. There has been, heretofore, no central bureau for collecting and preserving information regarding medical graduates. When a college became extinct, its records were often irrevocably lost. There has been no way of verifying statements regarding graduates, and consequently, in many cases, both the public and the profession have been imposed on. Accordingly, arrangements have been made with the existing medical colleges by which the names of all graduates for the past five years have been obtained, thus supplementing a list of previous graduates already in the hands of the Association. Hereafter, the name of each new graduate, with biographical information regarding him, will be obtained by the Association at the time he receives his degree. This will thereafter be preserved in permanent form. Colleges that request it will be provided, at any time, with information in the possession of the Association.

It will thus be seen that the Association, in the last year, has compiled a complete list of legally qualified physicians and a fairly complete list of medical graduates. This material is now stored in the vaults of the Association. Such a work has never before been undertaken. This department of the Association is now in a position to supply information regarding practicing physicians either to the state boards or others. The immediate response of every one of the secretaries of the state boards shows that they appreciate the need of such a work. The Association has established what is practically a central bureau of information regarding the medical profession of the entire country. It is now possible for the secretary of every state board, as well as every state health officer, to avail himself of any information in the possession of any of the 70 boards. The Association now has, for the first time in its history, a legal basis for the compilation and publication of personal and biographical matter relating to the profession.

It will thus be seen that the Directory is only a secondary and subsidiary matter, which is subordinate to a much greater work which the Association has undertaken. The American Medical Directory is a compilation of a part of the facts regarding each physician as they now appear on the records of the Association. The consideration of medical directories in general, as well as of the points of difference between the American Medical Directory and other directories, will be reserved for future discussion.

COMMERCIALISM AND DRUG ADULTERATION.

The New York City Board of Health has recently shown by careful investigation that a considerable portion of the drugs which have been sold in the past year and even those which enter into the composition of physicians' prescriptions are either below grade in quality or are absolute substitutions of cheaper for more expensive materials in order to secure more profit for the dealer. It is, of course, an extremely sad state of affairs when human life and illness and suffering are trifled with in this manner for the paltry difference in profits that may thus accrue. The discovery has given rise to no little pessimistic discussion in the newspapers, as if this were the first time that any such unfortunate lapse from rectitude had been noted and as if our generation were by that so much worse than any of its predecessors. The adulteration of drugs, however, has nearly always been a source of difficulty in the practice of medicine, and this is only another example of a very human tendency.

The reason for the present manifestation of human fallibility is not far to seek. In recent years druggists have come to be tradesmen much more than they used to be. The apothecaries were a guild in the olden times and are supposed to preserve a considerable degree of professional spirit. Unfortunately, the custom of selling various proprietary medicines at cut rates in order to attract custom has led more and more to the invasion of a thoroughly commercial spirit into the drug business. Not satisfied with cutting rates on "patent medicines," some druggists have advertised cut rates also in the filling of prescriptions. As a rule, this could be accomplished profitably only by purchasing drugs from the wholesaler at prices cheaper than they could be furnished if they were of the proper standard of purity, or else by substituting cheaper drugs for those named in many prescriptions. The wholesaler is to blame as much, if not more, than the retail druggist, and it is to be hoped that the punishment for the offences discovered will be meted out to the real culprits in the case.

It would be eminently desirable, however, that the modern druggist should make much more of a specialty of prescription filling than of the many side issues which now occupy so much space and attract so much attention in the apothecary shops. Physicians can do much to bring about an improvement in this matter by encouraging patients to take prescriptions to such pharmacists as properly maintain their professional dignity as apothecaries and do not allow the commercial spirit to obtrude itself unreasonably in their business.

STATE SOCIETY AUXILIARY COMMITTEE. as one

At the last meeting of the Ohio State Medica to the ciation the following by-law was adopted: "ly over annual meeting for the election of officers each co opera- nent society shall appoint one of its members as a member of the Auxiliary Committee on Public Policy and Legislation, and the secretary shall send his name and address at once to the secretary of the State Medical Association. The Committee on Public Policy and Legislation of the State Medical Association shall formulate the duties of this Auxiliary Committee and supply each member with a printed copy." It is the intention to have this committee look after the interests of the public and of the medical profession by assisting in the suppression of the "patent-medicine" evil, prosecuting fraudulent and illegal practitioners by inaugurating a system of registration, abolishing medicopolitical partisanship from public office, and assisting the proper public authorities in the suppression of criminal abortion. The work of this committee is an important one, and by having its members distributed over all parts of the state the results of the work done in this direction by the state association will become more effective and far reaching than ever before. Other state societies may well follow in the footsteps of the Ohio association by providing for the appointment of similar committees. It is certainly a step in the right direction.

A MODERN SUPERSTITION.

It is usually supposed that nowadays education has practically done away with superstition, and that whatever manifestations of it are left are to be found only among the ignorant and almost exclusively among the foreign immigrants into this country who have not had the opportunities that have been provided here. The recent automobile race on Long Island, however, almost provided another striking example of the influence of superstition even on educated people. There were to have been fifteen contestants, but fortunately the number was reduced to twelve before the race actually took place. Last year, with more contestants in it, though the different machines were numbered in rotation, the number thirteen was not given out, because it was understood that the drivers objected to riding with so dread a talisman on their cars. They are perfectly willing to risk their lives making records of over sixty miles an hour on an ordinary road, but they are not willing to take the awful added danger that would be incurred by identifying themselves with the number thirteen. It is well known now that most of the passenger steamers, at least those which leave the eastern ports of the United States, do not have state-rooms numbered thirteen because of the objection which many passengers have to traveling in such a room. Many of the hotels that have been built recently have eliminated the number thirteen from their series of rooms for a similar reason. Is it any wonder that with this senseless superstition still rampant, people should continue to think that various peculiar methods of treatment and even nonsensical remedies will relieve them of their pains and ills? What is needed, evidently, is not education in general, but specific training in a state of mind and a development of character that will prevent the domination of such foolish remains of the ignorance of former generations.

NEO-VITALISM.

A considerable portion of the recent opening address[1] of Professor Gotch before the Section on Physiology of the British Association for the Advancement of Science was given to an attack on "neo-vitalism." The principal point made against it was the objection to the admission that physico-chemical explanations must necessarily be insufficient to explain the vital phenomena, and the claim that such admission obstructs physiologic progress. This seems to us equivalent to a confession of weakness and, as it were, an inference that human knowledge is exhaustible or must be assumed so to be in order to encourage the workers. Why should the admission of the fact that there will always be something ahead of us to be explained be a discouragement to the physiologist any more than it is to the astronomer to recognize the fact that he can not look forward to the establishment of the limits of the universe or of infinite space? Has the work of those investigators who have admitted their limitations—men like Pasteur and Faraday, for example, not to mention a host of other workers—been any less fruitful in chemical and bio-chemical research than it would have been but for such recognition? It seems to us doubtful. It would be more modest in physiologists who oppose neo-vitalism so strenuously to profess a little agnosticism in the matter if they are unable to accept the unwelcome element of "mysticism" which they seem to think the doctrine involves. It would also be more scientific, it seems to us, to use less of the argument of expediency against the use of the term. It may be an assumption to say that life is always going to be unexplainable, and there are certain objections to the use of the term vital force which, we think, would be more properly made by the so-called mystics than by their opponents. It is, however, equally an assumption to claim that it will be thus explainable and is also lacking in proof.

---

[1] Nature, Aug. 23, 1906.

Medical News

CONNECTICUT.

New Hospital for Waterbury.—It is announced that $31,006 has been raised for the erection of a Roman Catholic hospital in Waterbury and that the site for the institution has been purchased.

Communicable Diseases.—During August 4 cases of smallpox were reported from two towns; 45 cases of measles from 20 towns; 35 cases of scarlet fever from 22 towns; 2 cases of cerebrospinal fever from one town; 127 cases of diphtheria from 2 towns; 50 or more cases of whooping-cough in 19 towns; 213 cases of typhoid fever in 36 towns, and 37 cases of consumption in 21 towns.

August Deaths.—During August, 1,639 deaths were reported in the state, equivalent to an annual death rate of 10.5 per 1,000. The deaths from infectious diseases numbered 231, or 14.1 per cent. of the total mortality. The principal death causes were: Diarrheal diseases, 337; diseases of the nervous system, 156; consumption, 123; accidents and violence, 110; heart disease, 105; pneumonia, 44; whooping-cough, 39; typhoid fever, 30; diphtheria, 16; measles, 7; scarlet fever, 6; malarial fever, 5, and erysipelas and cerebrospinal fever, each 2.

DISTRICT OF COLUMBIA.

Physicians for the Poor.—The secretary of the district board of charities has recommended that an allotment of $8.030 be made for hiring 22 physicians, at the rate of $1 per day, and that $2,370 be allotted for medicines, nursing and other incidental expenses, for the next fiscal year, beginning July, 1907.

Must Not Drive Fast.—Dr. Milton H. Prosperi, Washington, brought before the district branch of the police court, charged with fast driving, claimed in extenuation that when a physician is making an emergency call he should be allowed to drive faster than the police regulations allow. He was informed that he must observe the law against driving at an excessive speed and was fined $20, which was paid promptly.

Typhoid Fever.—Washington is suffering from an epidemic of typhoid fever, which is remarkable, as it has come immediately on the completion of a three-million-dollar filter plant, whose purpose is to render the water supply pure and sanitary. Dr. Lloyd McGruder believes that the infection is due to a contaminated milk supply, but Dr. William C. Woodward, district health officer, takes issue with Dr. McGruder, and states that every plant from which milk is shipped into the district is systematically inspected by officers of the health department and that in the absence of a laboratory no bacteriologic examination can be made of the milk supply.

Hospital News.—Work is being pushed for the early construction of the Walter Reed U. S. A. General Hospital. The building, which is to cost $200,000, will be constructed of red brick, will be 193 feet long by 25 feet wide, and will be about 125 feet from the ground to the top of the central dome.——Potomac Hospital, which was organized in April last and opened to the public by the colored physicians of the city, for giving free medical treatment to the worthy poor, without regard for race, creed or sex, has proven to be too small for the needs of its applicants, and it is now the hope of the directors to equip and maintain a larger general hospital. More than 1,200 patients have been treated in the hospital up to this time.

GEORGIA.

Hospital Notes.—The city council of Columbus has advertised for bids for the removal of the city hospital from its present site to a more desirable location, and it is probable that an entirely new hospital will be erected with a nurses' training school in connection.——The Atlanta School of Medicine announces the opening of its own hospital, at the corner of Bartow and Cain streets, on October 1. Two wards, with accommodation for 16 patients, have been built during the summer.

College Notes.—The Atlanta School of Medicine opened for enrollment, September 15, and lectures will begin September 26. It has been decided by the faculty that all courses shall be in separate calendar years and the length of the term has been increased from six to seven months. The new building is practically completed and ready for use.——The new building of the Atlanta College of Physicians and Surgeons, erected at a cost of $75,000, will be ready for occupancy about October 1.——The Carnegie donation will be used in fitting up the old Southern College building, which is to be known in the future as the Carnegie Pathologic Institute.

Personal.—Dr. Marion M. Hull has been elected professor of materia medica and therapeutics at the Atlanta School of Medicine, vice Dr. Charles D. Hurt, deceased.——Dr. William S. Elkin has been elected professor of gynecology and obstetrics in the Atlanta College of Physicians and Surgeons, vice Dr. Hunter P. Cooper, deceased.——Dr. Frank M. Ridley, La Grange, has been appointed chief surgeon of the West Point Route, to succeed the late Dr. Hunter P. Cooper.——Dr. Karl H. Hall, Atlanta, has been appointed assistant surgeon, with the rank of first lieutenant, in the Governor's Light Artillery, which is officially known as the Second Field Battery, N.G.,Ga.

ILLINOIS.

Diphtheria.—Kewanee reports a number of cases of diphtheria with two deaths, and many cases of so-called "sore throat."

Itinerant Vendors.—The State Board of Health has officially warned all municipalities to refrain from issuing licenses to itinerant vendors of drugs, who do not hold licenses issued by the board, according to the provision of the statutes.

Personal.—Dr. Charles E. Crawford, Rockford, has been reelected physician of Winnebago County.——Dr. A. D. Winsor has been appointed resident physician of the Maplewood Sanatorium, Jacksonville, vice Dr. Albert H. Dollear, resigned.

Treatment for Consumptives.—The Ottawa tent colony has decided to build a new infirmary 150 feet long by 20 feet wide. ——In the quarterly bulletin of the State Board of Charities the exceptionally beneficial results of the tent colonies at the various state insane hospitals for consumptive patients are given in detail. The tent colony at the Illinois Hospital for the Incurable Insane, Bartonville, shows a per capita cost of only $50 per year.

Chicago.

Cocain Users Fined.—Two negroes charged with using cocain were each fined $10 and costs September 20. Four other men arrested at the same time and place were discharged.

Addition to Hospital.—The Washington Park Hospital Association have the plans prepared for a three-story addition to the institution, to be erected on a lot 50 feet by 150 feet adjoining the hospital.

Trust Deed Given.—The Post Graduate Medical School, through its president, Dr. W. Franklin Coleman, has given a trust deed on its buildings and grounds to secure a loan of $24,000 for five years at 5½ per cent.

Maternity Hospital Planned.—The free maternity department of the American Daughters of the Revolution has made plans for a maternity hospital for the North Side, to be located near Lincoln Park, and to have accommodations for about 15 patients.

Personal.—Dr. and Mrs. Henry P. Newman leave October 1 for San Diego, Cal., for the winter.——Dr. and Mrs. Frederick Tice have returned from abroad.——Dr. William Ewart, London, who has been visiting Chicago, has started for Boston on his way home.

Increase in Typhoid Fever.—The health department has noticed a serious increase in typhoid fever, due, it is believed, to milk, contaminated by polluted water used in washing the cans and other receptacles. The department has closed one infected milk depot and has excluded the milk from two dairy farms, pending examination.

Deaths of the Week.—During the week ended September 22, 582 deaths were reported, equivalent to an annual death rate of 14.81 per 1,000. During the corresponding week of 1905 512 deaths were reported. Acute intestinal diseases caused 122 deaths; consumption, 78; Bright's disease, 44; violence, including suicide, 39; heart disease, 36; pneumonia, 35, and cancer, 25.

Physicians Play Golf.—At the annual tournament of the Chicago Physicians' Golf Association Dr. Charles W. Heywood, Riverside, defeated Dr. William E. Code for the championship; in the second flight finals Dr. William H. Wilder was victorious; Dr. J. C. Hollister won the third flight honors, and Dr. William A. Pusey the honors in the fifth set. At the annual election Dr. John Ridlon was chosen president.

INDIANA.

Urges Detention Hospital.—Dr. Everett E. Hodgin, police surgeon of Indianapolis, urges the city to take steps toward the establishment of a detention hospital for the care of insane patients, as at present there are few facilities for the care of the mentally deranged.

Hospital Opens.—The new hospital of the State College of Physicians and Surgeons, Indianapolis, affiliated with the State University of Indiana, was opened September 15, when 15 patients were removed from Camp Benjamin Harrison to the institution. At the formal opening the attorney-general, the mayor and the president of the university were among those who made addresses.

Births and Deaths of the Year.—The report of the births and deaths in the state in 1905, recently published by the State Board of Health, show that 44,114 births occurred, or 16.65 per 1,000. The largest number of births occurred during July and the smallest number in December. Plural births numbered 184. During the year 36,502 deaths occurred, equivalent to an annual death rate of 13.78 per 1,000. Of the deaths, 19,064 were males and 17,438 were females; 35,096 were white and 1,406 were colored. An interesting feature of the report is that 385 of the decedents were more than 90 years of age.

Typhoid Fever.—Dr. F. Sheldon Hunter, Bedford, secretary of the Lawrence County board of health, has investigated the typhoid-fever situation in Mitchell. He obtained samples from the three public wells, each of which was found to contain typhoid germs. It was reported that Mitchell had 74 cases of typhoid fever, but Dr. Hunter says that only 21 cases have been reported to him.——Reports of a typhoid-fever epidemic near Van Buren have been greatly overdrawn, according to the county health officer, who says that only 3 cases have been reported. Seven cases of fever reported to him a few days before were not typhoid, but malaria.

August Diseases and Deaths.—There was a lower mortality and less sickness in August, 1906, than in the corresponding month of 1905, according to the report of the State Board of Health. Diarrheal diseases were most prevalent. The order of prevalence was as follows: Diarrhea, cholera morbus, typhoid fever, cholera infantum, rheumatism, tonsillitis, dysentery, intermittent and remittent fever, bronchitis, inflammation of the bowels, scarlet fever, "typho-malarial" fever, influenza, diphtheria, pleurisy, pneumonia, whooping-cough, erysipelas, cerebrospinal meningitis, measles, puerperal fever and smallpox. During the month 3,000 deaths were reported, as compared with 3,073 in August, 1905, indicating respectively annual death rates per 1,000 of 13.3 and 13.6. Of the total deaths, 641, or 22.6 per cent., were of infants under one year and 691 of persons over 65 years. Tuberculosis caused 351 deaths. There were 32 fewer deaths from typhoid fever than in August, 1905. Smallpox was prevalent in mild form in four counties, 46 cases being reported. Violence caused 192 deaths, 7 of which were homicides and 22 suicides; of the latter, 6 were from gunshot wounds and 12 from poisoning. Of the accidental deaths, 46 were caused by railway and trolley car accidents, 25 by drowning, 9 by lightning and electricity, 29 by falls and crushing injuries, 9 by burns and scalds and 5 by sunstroke.

IOWA.

Typhoid Fever.—An epidemic of typhoid fever is reported at Storm Lake.——The health officers of Fort Dodge and Ames sound emphatic notes of warning to the residents of these cities regarding typhoid fever, warning them to have their drinking water analyzed, and advising as a routine measure that all drinking water be boiled.

Personal.—Dr. William B. La Force, Ottumwa, has been elected professor of gynecology and abdominal surgery in the Keokuk Medical College, College of Physicians and Surgeons, and has moved to Keokuk.——Dr. Thomas Farquhar, Early, has moved to Spokane, Wash.——Dr. Harold Bailey, Waterloo, has returned after six months in the London hospitals.——Dr. and Mrs. Albert H. Blocklinger, Dubuque, have returned after two years in Europe.

KANSAS.

Physicians Use Automobiles.—Out of the 82 licenses issued for automobiles in Topeka up to September 21, 14 were issued to physicians.

Typhoid Fever at Fort Riley.—It is reported that typhoid fever is prevalent at Fort Riley, and that as the chief medical officer of the camp deems its presence a menace to the health of other organizations, Company H, Thirtieth United States Infantry, in which 4 cases have occurred, has left for Fort Reno, Okla.

To Test River Water.—The secretary of the State Board of Health has signed contracts with the officers of the United States Geological Survey for an examination of the Kansas streams, looking after the solution of the problems of water supply, pollution and sanitation. The government will spend $1,500 and the state an equal amount in making this survey.

College Opens.—The Medical Department of Washburn University, Topeka, opened for the year September 4. Five faculty changes are announced: Dr. John B. Town has been appointed lecturer on embryology; Dr. F. J. Mahon Ernest, instructor in pathology; Dr. Charles B. Van Horn, lecturer on anatomy; Dr. Robert B. Stewart, instructor in clinical medicine, and Dr. Elizabeth Ernest, superintendent of the dispensary.

To Check Consumption.—Dr. S. Jay Crumbine, Topeka, secretary of the State Board of Health, has prepared for general distribution, a pamphlet on the subject of tuberculosis, whose object is to stop the spread of the disease, and warn the people of the dangers arising from it. The pamphlet contains these rules to be followed by state and county officers and employés in the state:

All persons in state and county employ are positively forbidden to spit on the floors.

Rooms, hallways, corridors and lavatories shall be freely aired and effectually cleaned at least once a day, and not during working hours.

Spittoons shall receive a daily cleansing with very hot water, and when placed ready for use must contain a small quantity of water.

Dust must be removed as completely as possible by means of dampened cloths or mops. It should never be needlessly stirred up by a broom or duster, as this practice only spreads the dust and germs.

Floors of tiling, brick or stone must be frequently scoured with soap and water

The senior clerks in charge of workrooms will take measures to secure during working hours the admission of as much fresh air and sunshine as the conditions will permit.

The use of individual drinking glasses is recommended.

Persons in state employ who suffer from pulmonary tuberculosis should be separated, when possible, from others while at work.

Home advice for consumptives:

Sleep alone.

Use no hangings, upholstered furniture or useless floor coverings in your sleeping room.

Whitewashed or painted walls are preferable to those covered with wall paper.

Expose the bedroom freely to the outside air when not occupied, and sleep with the windows open. Spend as much time as possible in the open air, and use the bedroom only at night.

Do not be afraid of cold weather as long as the body is protected, and be especially careful to keep the feet dry.

Keep the body warmly clad and guard against sudden changes in the weather.

Take plenty of nourishing food. Consumptives often need more nutriment than they are inclined to take. Milk, eggs and fatty foods are especially valuable, when they can be assimilated.

There is no known medicine that can cure consumption. Medicines for the relief of cough and other symptoms of the disease should be taken only on the advice of a physician.

MARYLAND.

Typhoid Fever.—Burkettville, six miles south of Middletown, with a population of less than 800, reports 16 cases of typhoid fever, with one death.

English Surgeon in Annapolis.—Staff Surgeon Alexander Gaskill, Royal Navy, who is in America studying naval hospital methods, visited the U. S. Naval Academy, Annapolis, September 20, and inspected the government hospital in process of construction.

Physician Injured.—Dr. Claiborne H. Mannar, Rockville, was seriously injured in a runaway accident near Halpine, August 23. He was kicked by his horse, breaking his jaw and causing severe cuts and contusions of the face. He was taken to a hospital in Washington and is reported to be improving.

Baltimore.

Typhoid Fever.—During the week ended September 15, 63 cases of typhoid fever were reported, and during the week ended September 22, 51 cases.

College Opens.—The Baltimore Medical College opened for its 1906-07 session September 21 with an address by Dr. David Street on "The History of Medicine."

Personal.—Dr. Thomas Shearer is in London.——Dr. William Green has returned from a prolonged trip to northern health resorts.——Drs. Randolph Winslow and J. Mason Hundley returned from Europe September 16.——Dr. Harry Adler has been unanimously elected president of the Hebrew Hospital and Asylum.——Dr. Roland B. Whitridge sailed from Genoa on his return from Europe, September 20.——Dr. Howard A. Kelly sailed from New York for Europe, September 12.

Hospital News.—An appropriation for $25,000 has been allowed for the erection of a hospital for infectious diseases, adjoining Bay View.——Johns Hopkins Hospital is considering the erection of a new building for the children's ward, to be three stories high, 204 feet frontage, with two wings, and to cost about $250,000.——Dr. Frank G. Moyer has obtained a permit to erect a four-story brick sanatorium at 1500 Eutaw Place.——The St. Agnes Hospital announces the following appointments on its staff: Dr. Joseph C. Bloodgood and Alexius McGlannan, surgeons, and Dr. Guy L. Hunner, gynecologist.

MASSACHUSETTS.

Harvard Dedication.—The new buildings of the Harvard Medical School, Boston, described in The Journal, July 7, page 50, were dedicated September 25 and 26. The program of exercises included addresses by President Eliot, Dean Richardson, Professors J. Collins Warren, Thomas Dwight and Frederick C. Shattuck, and Mr. Charles A. Coolidge, representing the architects. The exercises were followed by demonstrations in the different laboratories. On September 26 at 11 a. m. an academic session was held at the University of Cambridge, with an oration by Prof. William H. Welch of Johns Hopkins University. Honorary degrees were conferred on several notable members of the profession. Many distinguished guests from American and foreign universities and scientific bodies were present. The officers of the alumni association gave an informal reception on Tuesday evening to the alumni and guests, and on Wednesday at 1:30 p. m. the triennial dinner was held in Memorial Hall at Cambridge. Speeches were by President Eliot, Governor Guild, members of the faculty of medicine, as well as by several invited guests. A further account will appear next week.

MICHIGAN.

College Opens.—The Grand Rapids Medical College opened for the school year September 17.

Hospital Founded.—By the will of the late James L. Hurley, Flint, about $10,000 will be available to establish a hospital in Flint, to be named in his honor.

Typhoid Epidemic.—The secretary of the State Board of Health is conducting an investigation as to the cause of the recent epidemic of typhoid fever in Traverse City, where 150 cases of the disease are said to have occurred.——An epidemic of typhoid fever is reported by the health officer of Menominee.

Wayne County Society.—At the annual meeting of the Wayne County Medical Society, the following officers were elected and installed: President, Dr. J. Henry Carstens; vice-president, Dr. William F. Metcalf; secretary and treasurer, Walter D. Ford, and directors, Drs. Frank B. Tibbals, Guy L. Kiefer, H. Wellington Yates, George W. Wagner and Louis J. Hirschmann.

Personal.—Dr. David J. Hale, Fairplain, has returned from Panama.——Dr. Fannie Draper, Jackson, sails for China October 11.——Dr. Robert L. Kennedy, Detroit, has been appointed superintendent of the State Tuberculosis Sanatorium, to assume charge December 1.——Dr. James D. Kennedy and Dr. William H. Price, Detroit, sailed from New York for Europe, August 24.

Ill and Injured.—Dr. Joseph Poposkey, Grand Rapids, sustained a fracture of the left ankle in a runaway accident September 10.——Dr. LeRoy Lewis, Bay City, is at the Lewis Hospital, suffering from a fracture of the arm due to a fall.——Dr. James C. Abrams, Calumet, has been confined to his house for two weeks with congestion of the brain.——Dr. A. Curtiss, Big Rapids, was struck by a truck on a station platform at Clear Water, Minn., and sustained a fractured rib.

MISSOURI.

Funds Needed to Complete Hospital.—Of the $225,000 of bonds voted for the erection of a new city hospital building in Kansas City, it is reported that less than $20,000 remain, and it is anticipated that $100,000 more will be required before the institution can be made habitable.

Temporary Restraining Order Served.—Dr. Christian H. Eyermann, St. Louis, threatened by the State Board of Health with revocation of his license, because of advertising to cure appendicitis by electricity, has obtained a temporary restraining order against the board, denying to that body the right to revoke Dr. Eyermann's license as a physician and surgeon.

NEW YORK.

Physicians Try to Aid Patrick.—A petition signed by 3,500 physicians of New York State has been presented to the governor asking that a commission of experts be appointed for the purpose of settling the disputed medical point in the Patrick case. Patrick was sentenced to die for the murder of William M. Rice of New York City, and the case is now on appeal before the United States Supreme Court. The point raised, on which the expert testimony was so conflicting, was whether the congestion of the lungs might not have been the result of the embalming fluid and not of the chloroform, which it was alleged had been administered under the direction of Patrick.

New York City.

Personal.—Dr. Henry P. Loomis arrived from Europe on the *Baltic* September 20.——Dr. and Mrs. Edward L. Keyes, Jr., sailed for Europe on the *Nieuw Amsterdam* September 19.

Death from Typhus.—Because of the death of a child from typhus fever in the steerage, the *Cretic* was held at quarantine and all passengers were subjected to a rigid examination; the first and second cabin passengers were allowed to land, but the steerage passengers were detained.

Change at St. Gregory's Hospital.—It has been announced by Ballington Booth that the Volunteers of America and St. Gregory's Society have effected a union in the management of St. Gregory's Hospital in Gold Street. The building has been remodeled and equipped during the past year at a cost of $10,000.

Less Typhoid in Brooklyn.—It is announced by the Board of Health that while there were 689 cases of typhoid reported up to the present time last year, there have been only 173 cases reported thus far the present season. This is attributed to the effect of the advice of the department to boil all drinking water.

Amend Sanitary Code.—At the meeting of the Board of Health September 19, important amendments to the sanitary code were adopted in compliance with the new pure-food law. One of the amended provisions of the code is that no person shall have, sell or offer for sale any food which is adulterated or misbranded, and the term food is defined to include every article of food and every beverage used by man, and all confectionery. The code defines adulterations very minutely.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending September 15, 351 cases of pulmonary tuberculosis, with 150 deaths; 184 cases of diphtheria, with 19 deaths; 134 cases of typhoid fever, with 18 deaths; 74 cases of scarlet fever, with 4 deaths; 53 cases of measles, with 2 deaths; 38 cases of whooping cough, with 7 deaths; 14 cases of cerebrospinal meningitis, with 5 deaths; 2 cases of smallpox and 6 of varicella, a total of 856 cases and 205 deaths.

The Trachoma Problem.—It is asserted by Dr. John C. Lester assistant surgeon of the New York Eye and Ear Infirmary, that the cases of trachoma in the public schools are so numerous that the hospitals are utterly unable to cope with them. This is attributed to the filthy conditions of the tenement-house regions, especially on the East Side, one-third of the school children there being afflicted with trachoma. It is stated that one-quarter of the school children of Brooklyn are affected. The Board of Health is coping with the situation as best it can, but the situation is said to be serious unless more hospitals are established.

NORTH CAROLINA.

Personal.—Dr. P. L. Murphy has been re-elected superintendent of the State Hospital at Morganton.——Dr. Andrew J. Crowell has returned to Charlotte after a three months' stay abroad.——Dr. H. J. Williams, Jr., Winston, has gone to Edinburgh for a year's study. He expects to locate eventually in Cape Town, South Africa.

Vital Statistics.—During July 278 deaths were reported, equivalent to an annual death rate of 18.3 per 1,000. Diarrheal diseases and typhoid fever led in the death causes. During the month measles were reported from 11 counties; whooping-cough from 30 counties; scarlet fever from 4 counties; diphtheria from 10 counties; typhoid fever from 64 counties; malarial fever from 17 counties; cerebrospinal meningitis from 6 counties; peritonitis from 2 counties; pneumonia from 7 counties, and smallpox from 13 counties.

***College Sessions* Begin.**—The annual session of the North Carolina Medical College, Charlotte, opened September 8, with an unusually large enrolment. The additions to the faculty include Dr. Edward C. Register, professor of practice of medicine, and Dr. George W. Pressly, professor of the principles of surgery. The work on the new building is progressing rapidly. ——The fifth annual session of the Medical Department of the University of North Carolina, Raleigh, opened September 14 with an address on "The Value of Character to the Professional Man," by Dr. Augustus W. Knox, professor of surgery.

OHIO.

Diphtheria.—Carlton is reported to have 125 cases of diphtheria and the churches and schools have been closed.——The school at Story and Fairview school, east of Piqua, have been closed on account of diphtheria.

Violated Medical Law.—Mrs. Lida Hazlitt, Richmond, Ind., was arraigned at Springfield, Ohio, for practicing medicine without a certificate, was found guilty of violation of the state medical law, and was fined $30 and costs, which was paid.

Section on Pathology.—Dr. Otto V. Hoffman, Dayton, advocates the inauguration of a special section in the Ohio State Medical Association for the study of pathology, along lines similar to those of the pathologic exhibits, held at the annual meetings of the national association and several of the state medical societies.

Typhoid.—Cincinnati reports 40 cases of typhoid fever for the week ended September 14.—The Columbus Board of Health has instructed the health officer, Dr. McKendrie C. Smith, to enforce the state law against physicians who do not report the cases of typhoid fever in their care. The law provides a fine of not less than $100 for the first offense.

Personal.—Dr. Martin Stamm, Fremont, left August 20 for a tour of the world. A banquet was tendered him by the medical profession of the city August 17.——Dr. Mark Milliken, health officer of Hamilton, has returned from a trip to Colorado.——Dr. Charles W. Baker has resigned as a member of the East Liverpool Board of Health.——Dr. Myron J. Ewing and family, Findlay, left for their new home in Oregon September 8.

Endowment for Library.—By the will of the late James Patterson Walker, surgeon-general, Bengal service, his library, collected during a long term of service in India and other parts of the world, has been bequeathed to the Lloyd Library of Cincinnati, together with an endowment of $30,000 in cash, to be devoted to the encouragement of original research in the practice of medicine and pharmacy, with special reference to the specific action of medicines.

Medical College Opens.—The fifteenth annual session of the Ohio Medical University, Columbus, was opened September 11. Introductory remarks were made by the chancellor, Dr. James U. Barnhill, Columbus, and addresses were made on behalf of the trustees and the faculty. The faculty changes were as follows: Dr. Henry A. Rodebaugh, instructor in nervous diseases; Dr. Albertus C. Wolfe, formerly professor of diseases of the nose and throat, professor of therapeutics; Dr. C. E. Pfeifer, instructor in dietetics; Dr. P. M. Wright, instructor in therapeutics; Dr. Harry M. Snively, assistant to the chair of physiology, and Dr. Howard M. Brundage, assistant to the chair of anatomy.

PENNSYLVANIA.

Fire Loss.—*The house of Dr. John W. Groff, Harleysville*, was struck by lightning and destroyed, September 13. The loss was about $5,000.

Will Equip Hospital Room.—Dr. Will L. Shindel, Sunbury, has advised the building committee of the Sunbury Hospital that he will equip and furnish a private room in memory of his father, the late Dr. Daniel W. Shindel.

Typhoid Fever.—Nanticoke, which suffered from an epidemic of typhoid fever last year, reported on September 11, 16 cases, with two deaths.——During the five days ended September 14, 89 cases of typhoid fever were reported to the bureau of health of Pittsburg.

Ill and Injured.—Dr. Charles D. Hunt, Williamsport, was rendered unconscious by being thrown from his carriage, September 15.——Dr. Simon P. Earnest, Belmont, who was recently operated on at the West Penn Hospital, Pittsburg, is making satisfactory progress toward recovery.

Personal.—Dr. Andrew B. Gloninger, Lebanon, sailed for Antwerp, September 10.——Dr. Herbert Fox has been appointed supervisor of the state laboratory by State Health Officer Dixon.——Dr. Sydney J. Repplier, Reading, who has been appointed physician to the United States minister to Morocco and Algeria, left August 29 for Algiers and Fez.

Vaccination Not Compulsory.—The attorney-general declared September 12 that parents can not be compelled to have their children vaccinated. A teacher is compelled to refuse to admit unvaccinated children to the public schools, or those who have not presented a certificate of successful vaccination or of having had smallpox. When children have been refused admission to schools under these circumstances and have been sent home, parents can not be fined for having their children out of school.

Philadelphia.

Bequests.—By the will of the late Mary A. Fry, the Home for Consumptives will receive $2,000.——A bequest of $500 was made to the Wills Eye Hospital by the late Annie E. Hamilton.

Personal.—Dr. Ross B. Patterson has been appointed sub-dean of Jefferson Medical College.——Dr. Thomas F. Neil has been appointed superintendent of the Blair County Hospital for the Insane.——Dr. John H. Trinder has been appointed resident physician of Girard College.

Health Report.—The total number of deaths reported for the week ended September 15 aggregated 500. This is an increase of 101 over the number reported in the corresponding period of last year, and an increase of 11 over the number reported last week. The principal causes of death were: Typhoid fever, 16; pertussis, 11; consumption, 62; cancer, 23; alcoholism, 6; apoplexy, 20; heart disease, 34; acute respiratory disease, 36; enteritis, 57; hepatic cirrhosis, 5; appendicitis, 4; Bright's disease, 40; congenital debility, 10; suicide, 4; accidents, 16, and marasmus, 16. There were 162 cases of contagious disease reported, with 20 deaths, as compared with 176 cases and 20 deaths reported in the previous week.

GENERAL.

Personal.—Brigadier General Robert M. O'Reilly, who has been surgeon general of the Army for the past four years, was reappointed to that office by direction of the President of the United States.

Health Conditions of Cuba.—Passed Assistant Surgeon von Ezdorf reports that for the week ending September 11, 5 cases of suspected yellow fever and 9 cases of dengue were reported in Havana. He states that he has been informed that the conduct of sanitary work, particularly in eradicating yellow fever, will not be discontinued, although the country is engaged in suppressing a revolution.

Pennsylvania Surgeons Meet.—The Association of Surgeons of the Pennsylvania Lines held its twenty-fifth annual meeting in Pittsburg, September 13. The following officers were elected: Dr. Richard J. Morgan, Van Wert, Ohio, president; Dr. Adam M. Beers, Newcomerstown, Ohio, vice-president; Dr. Stewart L. McCurdy, Pittsburg, secretary and treasurer, and Drs. A. I. Bouffleur, Chicago, and James G. Carr, Coshocton, Ohio, members of the executive committee.

American Surgeon in Danger.—Assistant Surgeon Walter Robertson of the United States Public Health and Marine-Hospital Service, stationed at La Ceiba, Honduras, was, according to newspaper reports, threatened with assassination as the result of reporting a case of yellow fever. For over a week he dared not leave the consulate, and during that time fifty Americans guarded the consulate to prevent an attack by the natives.

Homeopaths Elect Officers.—At the annual session of the American Institute of Homeopathy, in Atlantic City, September 13, the following officers were elected: President, Dr. E. B. Hooker, Hartford, Conn.; vice-presidents, Drs. James W. Ward, San Francisco, and W. E. Reilly, Fulton, Mo.; secretary, Dr. Frank Kraft, Cleveland; treasurer, Dr. T. Franklin Smith, New York; registrar, Dr. J. H. Bald, Bay City, Mich.; necrologist, Dr. C. B. Kinyon, Ann Arbor, Mich.; member of the board of censors, Dr. G. H. Quay, Cleveland.

Missouri Valley Meeting.—The Medical Society of the Missouri Valley held its nineteenth annual meeting in Council Bluffs, Iowa, September 6 and 7. About 100 physicians were present. It was decided to hold the next session in Omaha, in March, 1907. The following officers were elected: Dr. O. Beverly Campbell, St. Joseph, Mo., president; Drs. William F. Milroy, Omaha, and C. O. Thienhaus, Milwaukee, vice-presidents; Dr. Charles Wood Fassett, St. Joseph, Mo., secretary (re-elected), and Dr. Donald Macrae, Council Bluffs, Iowa, treasurer (re-elected).

To Purify State Streams.—The representatives of the state health and sanitary engineering departments of New Jersey, Pennsylvania and New York held a joint meeting in Atlantic City, September 14, and adopted plans for the three states by united action to stop the pollution of the Delaware River. New Jersey has been at work five years on this project and has already accomplished much on the upper waters by compelling cities and towns to install modern sewerage disposal plants. Pennsylvania and New York have started on the same course, but the three states agreed that by working together the desired object can be more easily obtained. Those at the conference were: Col. Charles W. Fuller, chairman of the sewerage commission of New Jersey; Dr. Samuel G. Dixon, state health commissioner of Pennsylvania; Herbert Snow, chief sanitary engineer, Department of Health, Pennsylvania; Harry M. Herbert, engineer of New Jersey commission; Theodore Horton, engineer, New York Department of Health; A. H. Seymour, secretary, New York Commission of Health, and Wilbur Morse, secretary, Pennsylvania Commission of Health.

Cholera in the Philippines.—A particularly disquieting feature of the situation in the provinces, according to *Public Health Reports*, is that cholera has traveled overland over the new road which has recently been opened from the province of Laguna to the sea. The disease made its appearance almost simultaneously at the ports of Pagbilao and Lucena, in the province of Tayabas. Owing to the fact that it is impossible to give that careful attention to outgoing vessels leaving these ports which is given to vessels leaving Manila, it is feared that the disease may be carried by small sailing vessels to nearby islands, from which it may again spread throughout the Philippine Archipelago, as was the case in 1902. The bureau of health has taken vigorous measures to combat the outbreak at the ports of Tayabas province. While the disease has not been entirely stamped out in the ports, yet there has been a reduction in the number of cases and no spread to other ports. The impression is that if the disease can be confined to the same territory which it has occupied during the past year, which section is embraced within an area of 75 miles from Manila, the chances of entirely eradicating it during the next dry season are very good; but if the disease should now gain another foothold in the southern islands it would probably be several years before it could be successfully eradicated.

CANADA.

Typhoid Fever in Montreal.—A total of 63 cases of contagious diseases was reported in Montreal during the week ended September 8. Thirty of these were typhoid fever; 15 were tuberculosis.

Personal.—Dr. R. D. Sanson, Calgary, Alberta, is visiting in Toronto.——Dr. W. D. Ferris, Edmonton, Alberta, has been visiting in Vancouver.——Dr. R. H. Craig and Dr. Austin Irvine, Montreal, have returned home from a trip to Toronto, New York and Atlantic City.——Dr. R. A. Pyne, minister of education for Ontario, has returned from a three months' trip to the old country.——Drs. McMurtry, McDonald and Scott, Montreal, are leaving for China as medical missionaries. Dr. McDonald, who has been in the field before, works specially in Canton, whence come most of the Chinese in Montreal.

Tuberculosis Sanatorium for British Columbia.—The Rev. Dr. Moore of Ottawa, secretary of the Canadian Association for the Prevention of Consumption, has been in British Columbia in the interests of his association. At a public meeting, September 7, Dr. Underhill, the health officer of Vancouver, and Dr. C. J. Fagan, Victoria, the health officers of the province, and Dr. Moore made addresses. Dr. Fagan said that the lieutenant-governor, Mr. Dunsmuir, had contributed $10,000 for a sanatorium for the province; that the provincial government had given $5,000; the Canadian Pacific Railway, $5,000, and numerous private individuals, $2,500. It is desired to raise $50,000 before the work is proceeded with.

Proposed Department of Public Health in Ontario.—About a year ago, in a paper read before the annual meeting of the Ontario Medical Association, Dr. Charles A. Hodgetts, secretary of the Ontario Board of Health, advocated the creation of a separate department of public health under a responsible minister. The matter was fully discussed at a meeting of the Ontario cabinet recently. If such step is taken it is likely that the Hon. Dr. Willoughby, a minister now without portfolio, will be placed at the head of the department, and the present secretary, Dr. Hodgetts, made deputy minister. As the board of health is to be reorganized, it is altogether likely that it will take shape in the direction above indicated.

FOREIGN.

Nostrum Regulations in Australia.—The regulations of the Victoria (Australia) board of health with regard to the labeling of secret remedies containing poisons will go into effect Jan. 1, 1907, instead of October, 1906, in order to give British and American manufacturers time to comply with the new requirements.

Central Office for Research on the Brain.—It is announced that the Senckenburg Neurologic Institute at Frankfurt a. M., Germany, has been appointed the headquarters for international research on the brain. The committee making the appointment is an offshoot of the International Association of Academies of Science.

Prizes for Nursing Mothers.—The city of Leipsic, Germany, has decided to give money prizes to women who nurse their infants. Prizes are also to be given to midwives who distinguish themselves by aiding and persuading women to nurse their children. The prizes are supposed to take the place of any loss of earning capacity because of nursing.

Pawlow to Lecture in London.—The sixth Huxley lecture will be delivered October 1 at London by Prof. I. P. Pawlow, professor of physiology at St. Petersburg. His subject is to be "Recent Advances in Science and Their Bearing on Medicine and Surgery." It will be remembered that he received one of the Nobel prizes in 1904, for his classic discoveries in the physiology of digestion.

Plague in Turkey.—Consul Jewett writes from Trebizond that 4 cases of plague, with 1 fatal, were reported in the prison at that place, August 8. Eight cases and 3 deaths were officially reported up to and including August 18. The prison is situated near the other government buildings in the center of the city. It contains 700 prisoners crowded together in seven rooms that give not more than 10 square feet of floor space for each inmate. The sanitary condition of the prison is of the worst type. As the local authorities were dilatory, the consuls of the nine powers represented at Trebizond held a meeting and requested the governor-general to adopt vigorous measures to protect foreigners and commerce.

Effect of Plague and Malaria on the Birth Rate in India.—The sanitary authorities in the Punjab state that the influence of plague on the birth rate is of an indirect and general nature only; and that in spite of the fact that there were 334,897 deaths from plague in 1905, the birth rate in the Punjab rose from 41.5 to 44.4 per thousand of the population. The *Journal of Tropical Medicine* states that it is quite noticeable that more women than men die of plague in the Punjab, a fact probably owing to women being secluded indoors and therefore more in contact with the sources of infection. The birth rate would seem to be lessened more markedly by the prevalence of malaria than of plague. A severe malarial outbreak in the autumn is reported to affect the birth rate in the following year more than any other form of disease. For four years in succession the death rate in the Punjab has been higher than the birth rate; and the Punjab has recently had the highest death rate of any district of India, amounting to no less than 47.55 per thousand.

Syphilis in Turkey.—The Constantinople correspondent of the *Lancet* states that the spread of syphilis and venereal diseases is reported from several parts of Sivas. The sanitary inspector of the province has asked the central authorities of Constantinople promptly to adopt all the necessary measures in order to check the propagation of the malady and to treat the sufferers. It is intended to build in Sivas itself a hospital with 50 beds for syphilitic and venereal patients. Two medical men will be appointed with a salary of $60 a month. Their duty will be to visit all the contaminated localities and to render gratuitous assistance to all seeking such. They will also receive a proportionate sum for traveling expenses and for drugs and instruments. Similar measures have been adopted in other provinces.

The Antiquackery Campaign.—The efforts of those interested in the antiquackery movement in Germany have already borne fruit, as can be seen by the various numbers of the organ of the Antiquackery Society, *Hygienische Blätter*. The last number relates that a "nature healer" has recently been sentenced by the Elberfeld court under the following circumstances: He had prescribed homeopathic pills and warm baths to a woman with uterine cancer who had been urgently advised by her physician to have the growth removed at once. After the death of the woman the nature healer was condemned by the court to nine months' imprisonment. Another sign of progress is shown in the action of the Frankfurt "*Kleine Presse*," a lay paper, which received an advertisement for insertion accompanied by a considerable sum of money, setting forth the virtues of "coza powder," a cure for inebriety sent out by the "Coza Institute" in London. The advertisement stated that free samples would be sent on demand. The paper sent for a free sample under another address; with the sample came two boxes of the powder, C. O. D., for $5. The boxes were returned by the consignee, but by return mail one box was sent him with the statement, "one box alone is sufficient to cure in many cases," price $2.50. The paper returned the advertisement and the accompanying money, declining to do business with the Coza Institute, but writing up the affair in detail for its news columns, with appropriate comment.

LONDON LETTER.

(From Our Regular Correspondent.)

Infantile Mortality and Health Visitors.

The value of women as health visitors has been proved by an experiment at Limehouse, one of the poorest districts of the East End of London, where the infantile mortality stood at an alarming height. For some time the proposal to appoint health visitors was under consideration, but the borough council would not incur the expense. The need for a health visitor was so great, because of the ignorance among mothers as to the rearing of babies, that a private individual agreed to pay the salary of such an officer for two years. Her duty was to visit the homes of the mothers and give instructions as to the proper feeding of infants. At first she was looked on with suspicion, which she conquered by tact and ability. Reporting on her work the health officer says: "She visited and revisited the homes of 721 infants, 74 of whom died under the age of one year. The rate of mortality among the infants she visited was, therefore, 102 per 1,000 births. This is very satisfactory, considering that the area was selected on account of its high mortality and that the infant mortality for the whole district was 185 per 1,000 births." She pointed out the disadvantages of the bottle with the long tube and diminished the extent to which it was used. She also did her best to abolish the use of the dummy teat which, no matter how dirty, was inserted into the child's mouth whenever it cried and the feeding bottle was not at hand.

Mistakes in the Diagnosis of Fevers.

The annual report of the Metropolitan Asylums Board for 1905 contains the usual statement of the mistakes made by doctors in sending cases into the fever hospitals. Of the total admissions 9 per cent. (as compared with 10.7 in 1904) were found not to be suffering from the diseases mentioned on the medical certificates on which they were removed to hospital. There were 975 cases wrongly certified as scarlet fever. Of these, 96 were measles, 90 rubella, 106 tonsillitis, 147 erythema, 143 had no obvious disease and 149 were not diagnosed. There were 908 cases wrongly certified as diphtheria. Of these, 52 were measles, 544 tonsillitis, 55 had no obvious disease and 22 were not diagnosed. There were 247 cases wrongly certified as typhoid fever. Of these, 27 were influenza, 6 general tuberculosis, 64 pneumonia and 6 had no obvious disease. In the case of smallpox the mistakes formed a high proportion: 32 out of 74 admissions. The explanation is obvious. In recent years smallpox has become so rare that many doctors have never had an opportunity of seeing a case.

Lunacy in Ireland.

The special report of the inspectors in lunacy as to the large increase of lunacy in Ireland has been issued. The following conclusions have been arrived at: 1. The population of the country has decreased, but, while the number of insane has increased, the statistics do not offer precise grounds to put forward a definite opinion. 2. Without affirming that there has been no increase the inspectors conclude that the increased number is largely due to accumulation in public asylums. 3. The increase has occurred among the poor. 4. The increased number in asylums is due to accumulation and decreased discharges and deaths, to widening of medical opinion as to insane persons who should be confined, to the greater confidence in asylum treatment and the increase in the number and accessibility of asylums, to the great longevity owing to improved sanitations, and to the influx of returned emigrants broken down mentally. 5. The statistics of insanity in other countries, more, even, than those in Ireland, point to the fact that, notwithstanding their undoubted intellectual gifts, the Celtic race is prone to mental disease. 6. Next to heredity, intemperance heads the list of causes of insanity. General paralysis of the insane is on the increase, though in the rural districts it is practically absent.

The Use of Diachylon as an Abortifacient.

The use of lead as an abortifacient is a practice which was unknown in this country until 1893, when it was first described by Dr. Pope of Leicester, who reported two fatal cases. Subsequently other cases were published, principally in the Midlands. In 1901 the process extended to Sheffield, where it became very prevalent. The lead was taken in the form of diachylon plaster or in patent "female pills." In and around Nottingham an increasing use of diachylon as an abortifacient among the working classes has been recently observed. The attention of the city authorities was directed to the subject, and it was found that in cases of abortion pills described as "Mrs. Seagrave's pills" had been taken. Mrs. Seagrave (*alias* Wardle) was found to be doing an extensive trade in the sale of these pills, both to married and to unmarried women. A box of pills was obtained by an agent of the health department and found to contain from 50 to 70 per cent. of diachylon, aloes and an outer coating of boric acid. The pills were roughly made and varied in weight from 1½ to 5 grains. Mrs. Wardle was arrested and a large quantity of pills and implements for making them were found in her house. She was brought before the magistrates and three witnesses were produced who had bought pills from her, became seriously ill after taking them and aborted. The medical evidence showed that they suffered from lead poisoning. Mrs. Wardle was committed for trial at the assizes, where the women who had purchased the pills stated that she had instructed them to take a dose of Epsom salts, fasting in the morning, then four of the pills, and four of the pills again at night. For the defense it was stated that Mrs. Wardle had no idea that the pills were harmful and that she had sold them not for the purpose of procuring abortion, but only as "female pills" to be taken in cases of irregular and suppressed menstruation. Several witnesses were called, both male and female, who stated that they had taken the pills and derived benefit from them for such ailments as bad backs, internal pains and anemia. To rebut the last statement the health officer was called and stated that anemia was one of the earliest and most constant symptoms of lead poisoning and that lead would aggravate instead of benefiting anemia. The judge in summing up said that it was difficult to reconcile Mrs. Wardle's statement that she was not aware of the harmful effects of diachylon with the fact that she had advised her clients in every instance to take Epsom salts, which were an acknowledged eliminator of lead. She must have known that diachylon contained lead. She was found guilty, but recommended to mercy, and sentenced to eighteen months' hard labor. The judge said that he wished it to be clearly understood that the offense was a felony for which the maximum penalty was penal servitude for life.

VIENNA LETTER.

(From Our Regular Correspondent.)

Union of Medical Representative Clubs in Austria.

An important evolution in the organization of medical practitioners took place a short time ago when at a meeting of the delegates of nearly all the medical clubs a uniform and unanimous basis for work was arrived at. In order to understand the difficulties and obstacles that have prevented hitherto a complete organization of the profession in our dual empire, Austro-Hungary, it must be kept in mind that no fewer than nine different nations and languages are combined to form this one realm. Racial and religious differences were so powerful, even in the capital itself, that the 2,800 doctors of Vienna were not found unanimous in the fight against bureaucratic arrogance two years ago, when the governor dissolved the "Aerztekammer" and ordered a new election of that medical representative body. Matters have improved since, and the organization has proved such an influential agent in attaining minor results that at last all obstacles have been overthrown and now the entire body of the practitioners in Austria, some 12,000 men, are practically brought under one hat. In all matters pertaining to the general condition of medical men, to hospital education, appointments, to ethics and legislative representation the newly formed union will proceed hand in hand with the clubs and accept the ideas proffered by each single rural branch. The first trial of the working order of the union was made in the organization of the strike of the country practitioners of Lower Austria, when the union had to prevent "blacklegging," in which endeavor it had full success. Although the conflict between the country doctors and the state is still raging, not a single case of strikebreaking has been noticed. There are two more points where the union will have to show its power. One is contract practice, which a law promulgated 18 years ago made compulsory for all persons employed in factories and business concerns. Through the absence of even the rudiments of organization at that time, medical influence could not be brought to bear on the proposed bill, and the interests of the doctors were sacrificed to the convenience of the tradesman. The present year has already seen the first conflict between the organization and some clubs. The other point, where a change is urgently wanted, is the condition of the hospital staff, which, in its majority, is unpaid, except the professors and senior assistants. As the "output" of the universities is so large, the numerous M.D.'s turned out yearly are glad to be able to work at a hospital. Thus the state employs the hands and minds of hundreds of young doctors without paying for it. This increases the difficulties, which are already large enough, in the path of the young doctor, who is anxious to find his living by work for which he has been educated. The union will take the matter in its hands and will most likely cause a strike among the juniors until the state finds the money.

A New Children's Hospital.

By a munificent gift from a private individual, a new hospital for children has been erected at a cost of about 600,000 kronen ($120,000). It has been added as a separate pavilion to the existing Franz Joseph Hospital, so as to save the expense of a separate administrative staff, but otherwise it is quite an independent hospital, equipped with all the latest and most modern appliances for scientific work. At present it will accommodate 100 in-patients, but its capacity will shortly be increased to thrice this number. It is meant first for emergency cases, and will be open free of charge to all such.

Correspondence

Somnos.

We give space to the following letter so that the H. K. Mulford Company cannot say that we are not treating it fairly, although much of the letter is a repetition of what has been stated before. There is no use in attempting to befog the question:

Philadelphia, Sept. 19, 1906.

To the Editor:—Had your report of the findings on "Somnos" (Elixir Trichlorethidene Propenyl Ether, Mulford) been confined to that product, we might not have felt called on to address this letter of protest, even though prejudice is shown in the treatment of the subject.

You have seen fit, in The Journal of the American Medical Association, September 15, to attack the integrity of the H. K. Mulford Company and seriously to injure our reputation as a manufacturing house. To this we take strong exception. As your charges are based on what we have said on labels and in advertising circulars concerning "Somnos," we herewith briefly relate the history of its introduction:

Some six years ago two chemists, Dr. Albert C. Barnes, a graduate of the University of Pennsylvania, and Dr. Herman Hille, a graduate of the University of Heidelberg, who were at that time engaged in original research in our scientific department, presented to us a chemical product to which they gave the name chlorethanal alcoholate, as expressing its chemical description, and the symbolic formula $C_5H_{11}O_6Cl_9$, giving its composition. A study was made of its physiologic properties and sufficient clinical data obtained to convince us that we had an important drug which had never before been investigated as a therapeutic agent

Realizing the importance of having these experiments verified by impartial and competent observers, we communicated with the University of Pennsylvania, July 30, 1902, requesting that physiologic experiments be undertaken on this product, and Dr. Colin C. Stewart, then one of the demonstrators in that institution, and now associate professor of physiology at Dartmouth Medical College, undertook the work.

Following are copies of several letters written by us in correspondence with Dr. Stewart at the time:

July 30, 1902.

Dr. C. C. Stewart, University of Pennsylvania, care Physiological Department.

Dear Sir:—Will you kindly advise if you are in a position to take up the investigation of a product (Somnos) which we have, and determine its physiologic action. We are desirous of having our own laboratory tests confirmed.

Will be glad to have you communicate with us at an early date.

February 4, 1903.

Dr. C. C. Stewart, Physiological Department, University of Pennsylvania.

Dear Sir:—We are particularly anxious to have the experiments at some reliable institution or hospital carried out in connection with the physiologic work you are doing—the remedy is one of such importance to the physician that its complete physiologic action should be determined at as early date as possible.

Dr. Stewart's experiments and investigations covered a period of about a year, and fully verified our claims, namely, that Somnos was a hypnotic, differing essentially from chloral in that in medicinal dosage it had no depressing effect on the heart and circulation, amounts equivalent to over 1,000 c.c. (33 fl. oz.) of the elixir (Somnos) for a 150-pound man having been injected intravenously in animals without lethal effect, the lethal dose at that time not being determined. We were, therefore, amply justified in making the claims which appeared on labels and in our brochure on "Somnos."

In December, 1905, we submitted Somnos to the American Pharmacologic Society, Prof. Reynold Webb Wilcox, president of the association having become interested in the clinical use of Somnos, having used the drug since May, 1904, in the treatment of seventy-two cases. Samuel P. Sadtler, Ph.D., LL.D., professor of chemistry at the Philadelphia College of Pharmacy, chemical editor of the U. S. Dispensatory, one of the committee of revision of the U. S. Pharmacopeia, and one of your Comcil on Pharmacy and Chemistry, was selected by the society to verify the chemical claims for the product. He substantiated the claims of our chemist and found it to be chlorethanal alcoholate, a definite chemical compound, with the symbolic formula $C_9H_{11}O_6Cl_9$, as claimed and devoid of free chloral. This verified our claim that chlorethanal alcoholate is a synthetic compound. Dr. Sadtler, however, suggested that the name "trichlorethidene propenyl ether" be used in place of chlorethanal alcoholate, since the latter was usually used to designate compounds of ethyl alcohol and not polyatomic alcohol.

Up to this time we had expressed the chemical composition of Somnos in technical language, not for the purpose of deceiving the medical profession, as charged by you, but to protect our interests, since the product was not patented.

Professor Sadtler's report, covering four months' investigation, was published in Bulletin No. 1 of the American Pharmacologic Society, and copies sent to you.

After Professor Sadtler's report was published in the bulletin we changed our labels and literature to conform to his suggestions by using the name trichlorethidene propenyl ether in place of chlorethanal alcoholate.

Following are copies of the label used prior to the report and subsequent to it:

EXHIBIT 1.

MULFORD'S SOMNOS,

(Chlorethanal alcoholate) $C_9H_{11}O_6Cl_9$.

Reliable and Safe Hypnotic and Cerebral Sedative.

Indications: In insomnia Somnos is the ideal hypnotic. It is especially valuable in the sleeplessness attendant upon hysteria, "nervousness," neuralgia, typhoid fever, pneumonia, la grippe, alcoholism and mental diseases.

Directions: One to two tablespoonfuls in a half glass of water or milk one or two hours before bedtime, repeated if required. For children, one-half to one teaspoonful, according to age.

H. K. Mulford Co., Chemists, New York, Philadelphia, Chicago.

EXHIBIT 2.

MULFORD'S SOMNOS (word-mark).

(Elixir Trichlorethidene Propenyl Ether)
(Formerly known as Chlorethanal Alcoholate).
Hypnotic, Cerebral Sedative and Antispasmodic.

Dose.—Adults, as a hypnotic, 1 to 2 tablespoonfuls repeated every hour or two, or as required. As a sedative, dessert to tablespoonful in a half glass of water or milk. Children ¼ to 1 teaspoonful, according to age.

H. K. Mulford Co., Chemists, New York, Philadelphia, Chicago.

Prof. Colin C. Stewart was engaged by the society for the physiologic investigation. His report, published in the bulletin, shows that the elixir (Somnos), is not depressant, even when given in six times the prescribed hypnotic dose; that the lethal dose, judging from its effect on dogs, is not less than 16½ fluid ounces. This report verified his previous investigations, made at the University of Pennsylvania in 1902 and 1903.

Professor Stewart's earlier work was published, but by his request was afterward withdrawn. You, however, were advised that the work had been done and fully acquainted therewith. Furthermore, you were furnished a copy of Professor Sadtler's report and a copy of Professor Wilcox's clinical report.

You state that we refused to be guided by your suggestion, yet we had no knowledge of the result of your investigation until your virulent attack was made in The Journal, September 1 and 15. From a communication received under date of Feb. 21, 1906, and signed by you, we quote:

> Three preparations are mentioned (in your advertisement) that have not been acted on (by the Council) Protan, Proferrin and Somnos, but my opinion is that that they will be approved for advertising in the form in which they now appear in the copy.

From the fact that an advertisement was accepted and published, inference is natural that our claims for Somnos had been found correct.

In you issue of September 15 you state:

> The attention of the officers of the Company was called to the matter (of Somnos), and it was hoped that they would submit a plain statement regarding the composition of the preparation and modify the literature to conform to the actual facts. This they did not seem inclined to do, at least they did not do it.

Every request for information from you for your Council has been freely and at once answered, and all additional data in our possession promptly furnished. No request was received from you to modify our literature in any way. How could you make such a request before you had your data? Why should we modify our claims when we were possessed of the facts mentioned, and in addition possessed voluntary communications from physicians above reproach supporting our stand?

On receipt of Professor Sadtler's report, our labels and literature were changed at once to conform therewith, and you were advised thereof. We did not change our labels and literature after statements had appeared in The Journal that Somnos is a mixture of chloral and glycerin, or a combination of the two held together so loosely as practically to amount to the same thing, because the only way to determine the truth of this statement was by physiologic and chemical investigations, and then we had in our hands such data to support our claims.

Prof. Colin C. Stewart's report states:

> In many instances in dogs it has been found impossible, within the limits of human endurance, to produce death in the manner described. Thus in one case 114 c.c. of the elixir (Somnos) were injected intravenously, and 30 c.c. administered by the stomach, in the course of three and three-quarter hours without fatal result. This total of 144 c.c. for the animal in question represented a dose of 11.75 c.c. per kilo, or fifty-one times the prescribed dose of 0.23 c.c. per kilo, corresponding to a dose for a 70 kilo man of 822.5 c.c. of Somnos, containing 45.24 gm. (696.7 grains) trichlorethidene propenyl ether, chemically equivalent to 42.02 gm. (647.1 grains) hydrated chloral.
>
> In two other dogs (II and III) the lethal doses were 68 c.c. and 108 c.c. respectively, corresponding to thirty-three and fifty-seven times the prescribed dose of 0.23 c.c. per kilo of body-weight.
>
> This is equivalent to doses, for a 70 kilo man, of 532.2 c.c. and 919.2 c.c. Somnos, containing respectively 29.27 gm. (450.8 grains) and 50.56 gm. (778.6 grains) trichlorethidene propenyl ether, chemically equivalent to 27.18 gm. (418.6 grains) and 46.96 gm. (723.2 grains) of hydrated chloral.
>
> The lowest lethal dose for dogs, representing for a 70 kilo (150 pounds) man 488 c.c., of Somnos, contains 26.83 gm. (413.2 grains) of thrichlorethidene propenyl ether, chemically equivalent to 24.92 gm. (383.8 grains) of hydrated chloral.

These results could not have followed if Somnos was a mere solution or mixture of chloral in glycerin, or if Somnos resolved itself into chloral and glycerin on being taken. What hypnotic drug can with safety be administered in thirty-three times the normal dose?

Tests were not made with equivalent amounts of chloral for the reason that Somnos is not chloral, nor does it contain any free or uncombined chloral.

If reports made to us are correct, our conclusions must stand; if they have been incorrect, we are interested, and will gladly subscribe to results if observations are from competent observers.

The above statement regarding the commercial introduction of trichlorethidene propenyl ether (Somnos) is true; therefore, you and the Council should withdraw the charge of fraudulent intent. It would seem also a mere measure of justice that the Council publish the names of the investigators who did the work on which its report is founded. The question of the therapeutic value of any drug can only be settled by a collective investigation of the product in which the observations of competent investigators are repeatedly verified, and we are perfectly willing to abide by the results of such an investigation.

We now ask you to retract your statements:

1. That our house has "stooped to dishonest or unfair practices."
2. That Somnos is not a definite chemical product.
3. That Somnos contains free or uncombined chloral.

How can the work of Professor Sadtler on the chemistry, Prof. Colin C. Stewart on the pharmacology, the report of Professor Wilcox on the therapeutic value of Somnos be entirely ignored? Further than this, how can you subscribe to the statement that we have refused information when your letter files and ours, show abundant proof that the same has been fully offered and sent you.

We are justified in asking that the question of the pharmacologic and therapeutic results be submitted to a body of competent experts in physiologic therapeutics, to be mutually agreed on, and the results published in The Journal.

H. K. Mulford Company,
Milton Campbell, President.

The Journal is asked to retract the following statements:

(1) "That our house has stooped to dishonest or unfair practices."

(2) "That Somnos is not a definite chemical product."

(3) "That Somnos contains free or uncombined chloral."

Replying to 2 and 3 first. We have in no place claimed that Somnos is not a chemical compound, but have repeatedly referred to it as such; and we have never asserted that it contains free chloral, or chloral hydrate. We have only claimed that which the H. K. Mulford Company itself now admits to be the case, viz.: That Somnos is an unstable compound of chloral and glycerin which decomposes into its elements, chloral and glycerin, at about 104° F. Sadtler, in his report on the chemistry of Somnos, says:

> The isolation of a definite compound resulting from the reaction of chloral on glycerin seems to be almost impracticable owing to its instability.

The Council has shown that the physiologic effects of chloral glycerate (Somnos) are identical with those of a corresponding amount of chloral hydrate. Mulford's letter states that Prof. C. C. Stewart (who performed the physiologic tests for the firm) did not make tests "with equivalent amounts of chloral." So long as the physiologic action of Somnos is the same as that of an equivalent amount of chloral (and the H. K. Mulford Company admits that it has no experiments to disprove this conclusion of the Council) it matters little whether or not it is a definite compound. We repeat that we have only stated what Mulford now admits: viz., that Somnos is an unstable compound. In fact, Frænkel in "Arzneimittelsynthese," p. 444, Edition 1906, states of chloral derivatives:

> Only such compounds from which chloral is easily regenerated have the hypnotic effect, whereas more stable compounds have often a strong toxic effect, without the equivalent hypnotic effect of chloral.

Also, p. 446:

> Only such chloral derivatives act as hypnotics from which the organism can split off the active chloral. The others act, owing to their chlorin content, as poisons, but not as hypnotics.

If the H. K. Mulford Company does not like the first alternative, we are satisfied to let it take the second.

It is requested that we retract our statement that "To say the least, it has not been honest and square in the matter." We would like to believe that the firm wanted to be "honest and square," and that it was misled in some way. How can we, however, when we consider the following:

While it was possible to express in simple English what this preparation is, "chloral glycerate" or "an unstable compound of chloral and glycerin," the firm put it out under the name "chlorethanal alcoholate"—a name which it now admits to be incorrect or misleading.

Apparently no thought was given to the physician on whom rested the responsibility of prescribing the drug; and this is a grave responsibility, both moral and legal, when it concerns a drug so toxic as chloral hydrate. Was this "honest" or "square"? Later, although admitting that Somnos is an unstable compound of chloral and glycerin and even pointing out the analogy between it and the compounds of chloral with water (ordinary chloral hydrate) and alcohol (chloral alcoholate) the firm, instead of stating this plainly to the physician, calls it "trichlorethidene propenyl ether"—a name which will not enlighten one physician in ten thousand, whereas the obvious name, chloral glycerate, would not be misunderstood by one physician in ten thousand.

Chloral plus water makes chloral hydrate.
Chloral plus alcohol makes chloral alcoholate.
Chloral plus glycerin makes chloral glycerate.

We are told:

> Every request for information from you for your Council has been freely and at once answered, and all additional data in our possession promptly furnished.

What was desired and hoped for was that the H. K. Mulford Company would publish to physicians a "plain statement regarding the composition of the preparation and modify the literature to conform to the actual facts." This it did not do and has not done.

The letter states:

> We had expressed the chemical composition of Somnos in technical language . . . to protect our interests.

This then is the firm's excuse for using as a description of Somnos chemical terms unintelligible to physicians. Accepting the truthfulness of this excuse we leave it to others to judge of its sufficiency. In plain English, terms are used that a chemist could understand, at least if he were sufficiently interested to look into the matter, but which not one physician in ten thousand could decipher. The chemist, however, and not the physician is the one who would imitate the preparation if any one did. To put it in other words, the H. K. Mulford Company claims that to protect itself against chemists it uses a nomenclature which chemists can understand, but which is unintelligible to physicians. But accepting this as the reason, it shows to what extent the spirit of gain is affecting our sense of right and wrong, when such an excuse can be calmly offered for not informing physicians of the character of the preparation.

So far as we can discover from the literature, Somnos was put on the market without a word to indicate whether it was a 5 per cent or a 20 per cent or a 50 per cent solution, or the pure chloral glycerate. Somnos was offered to physicians in such a way as not to indicate to them in any intelligible fashion that it was in any way related to chloral. Physicians must have prescribed it under the impression that it was the pure substance, since the synonym "chlorethanal alcoholate, $C_5H_{11}O_4Cl_3$," appeared directly under the name "Somnos" on the label and in the circulars. Was this "honest" or "square"?

The firm has been claiming that Somnos possesses "the hypnotic qualities of chloral without its untoward effects;" that it has "no toxicology;" that it is "harmless in twenty times the dose prescribed," etc., etc. (see brochure "Somnos"). It now states (see above letter) that "tests were not made with equivalent amounts of chloral" and C. C. Stewart (their own expert) states "twenty times the normal dose must be considered as an extremely dangerous quantity." Was it "honest" or "square" to the physician to make such reckless statements about the harmlessness of Somnos?

The letter asks:

> How can the work of Professor Sadtler on the chemistry, Prof. Colin C. Stewart on the pharmacology, the report of Professor Wilcox on the therapeutic value of Somnos be entirely ignored?

To this we answer: (1) Prof. Sadtler's work confirms what we have been maintaining, viz., that Somnos is an unstable compound of chloral and glycerin; Sadtler says that "the isolation of a definite compound resulting from the reaction of chloral on glycerin seems to be almost impracticable, owing to its instability," although he is satisfied that he showed that such a compound exists. (2) To show that we did not ignore C. C. Stewart's report, we quote the following from the article, the "Pharmacology of Somnos," The Journal, A. M. A., Sept. 15, 1906, p. 873:

> The writer (Stewart) states, page 19 (*Bull. Amer. Pharm. Soc.*): "As nearly, therefore, as can be determined by experiments on the lower animals, twenty times the normal dose must be considered as an extremely dangerous quantity."

To this we added:

> Yet this firm has been sending broadcast throughout the country the statement that Somnos is "harmless in twenty times the dose prescribed."

We also commented on the fact that Stewart reports no experiments on the toxicity of chloral hydrate. We considered every statement Stewart makes and repeated his experiments and found that while large amounts of Somnos may be injected into animals, slightly larger amounts of a 5 per cent solution of hydrated chloral could be given before death resulted. The experiments of the Council show that chloral hydrate is safe up to a certain point and Somnos is safe up to the same point. Equivalent doses have practically the same effect in producing sleep, in depressing the heart's action, in depressing the temperature, and in producing death. Bearing the above in mind, and remembering that the firm admits now that no comparative tests were made with chloral hydrate, was it "honest" and "square" to publish the following comparative statements, which we copy from Mulford's advertising booklet, "Somnos:"

CHLORAL HYDRATE.	SOMNOS.
Acute poisoning.	Harmless in twenty times dose prescribed.
Deep coma.	Coma unknown.
Weak, irregular, slow, feeble pulse.	Heart never depressed, pulse strong, regular and full.
Diminished respiration and lividity.	Respiratory center stimulated, rather than enfeebled.
Destruction of red corpuscles.	No effect on the blood.
Abolition of reflexes.	Cerebral effects never so profound.
Skin cold.	Skin warm.
Temperature subnormal.	Temperature uninfluenced.
Chronic poisoning.	No toxemia.
Craving soon established.	Craving never established.
Gastrointestinal irritation.	Always absent.
Erythematous eruptions.	Unknown.
Dyspnea.	Respiration ever calm.
Disturbed mental equilibrium.	Mentality clear, sensorium normal.
Somnos has no Toxicology.	Somnos habit is unknown.

(3) As regards Professor Wilcox's report, we prefer to postpone comment until physicians compare the results obtained with a 5 per cent. elixir of chloral hydrate with those obtained with Somnos (a 5 per cent. elixir of chloral glycerate). So long as the strength of Somnos was held as a "trade secret," comparisons with other hypnotics had little value. Professor Wilcox closes his report by saying, "evidently, we are closely approaching *the standard hypnotic which I postulated in 1897.*" In a circular issued by Parke, Davis & Co. we read this, also written by Professor Wilcox in 1900: "*Chloretone is our closest* approximation to that theoretical hypnotic toward which we have been led through a study of the working hypothesis of the sleep-phenomenon."

As regards Mulford's proposition to have our experimental observations repeated and verified by competent investigators, we should gladly welcome such an investigation and publish the results, of course, provided that the investigation be carried out in scientific detail and parallel experiments be made with equivalent quantities of chloral hydrate and chloral glycerate (Somnos). We would suggest as a first, and presumably a *final*, step, that Professor Stewart, who has already done the experimental work for the H. K. Mulford Company, be requested to carry out the parallel experiments.

Finally, we suggest that physicians who are in the habit of using Somnos compare the action of Somnos with that of chloral hydrate, remembering that 15 c.c. (one tablespoonful) of Somnos contains the equivalent of 0.75 gm. (12 grs.) of chloral hydrate.

Tastes of Mosquitoes.

Philadelphia, Sept. 15, 1906.

To the Editor:—The editorial reference in The Journal, September 15, page 865, to some observations on the preferences of mosquitoes in the matter of clothes, leads me to call attention to a source of error in such experiments. Some years ago a bulletin of the Hygienic Laboratory of the United States Public Health and Marine-Hospital Service detailed experiments on different colored stuffs with a view of determining if mosquitoes possess color preferences. I have not the bulletin at hand, but my recollection is that yellow was found to be least sought.

The error that enters into such tests is that the avoidance of some colors may be due to the odor of the dyestuff and not to the color. Many of the yellow colors now in use are nitro-derivatives, and even a very minute exhalation of a nitro-compound would be likely to be objectionable to the insect. Apart from this, many of the coal-tar dyes have perceptible odors, particularly when warm. Henry Leffmann.

Interstate Reciprocity and Frauds in Medical Schools.

San Francisco, Sept. 18, 1906.

To the Editor:—In The Journal, September 1, is a letter from Dr. Dudley Tait bearing the above title. The first portion of Dr. Tait's letter will be passed over and only that portion reviewed which deals with the case of Mr. Painton and the College of Physicians and Surgeons of San Francisco.

A portion of the truth may sometimes be so manipulated as to be more unjust and a greater misrepresentation than a direct falsehood. Mr. Painton is a graduate of an accredited high school. He is also a graduate of one of the *California* state normal schools. In addition to that, he has done much post-graduate work in scientific and literary branches. That places him above the required standard of the present California medical law in regard to his preliminary education. At the time that Mr. Painton matriculated in the College of Physicians and Surgeons he was justly entitled to advanced standing in certain branches, which advanced standing was not then prohibited, either by law or by regulation of the state board. The College of Physicians and Surgeons was then giving a continuous course of instruction, which plan of instruction is still in vogue in some of the leading medical schools of the United States. Since then, the course has been changed to conform to the requirements of the Association of American Medical Colleges. Mr. Painton, being poor in pocket, had to earn his own way. He *did teach a portion of each of two years.* In addition to the credits to which he was entitled, he took the summer courses, doing some work in both the medical and pharmacy departments, taking all the regular examinations in each portion of the work he pursued. In the medical department he took all the work required by the rules of the Association of American Medical Colleges, in addition to the credits which he might have claimed by reason of his studies previous to matriculating in medical college. He did this during the first two years of his course. The change in the course necessitated his taking the last two years' work at a time in the year which precluded his teaching. In these last two years he proved himself a good and intelligent student. He passed all his *examinations and received no conditions. All these facts* the college records show. Dr. Tait did not consult the records nor any member of the college faculty before writing his letter.

A word is necessary concerning catalogues. It is a well-known fact that a college catalogue is not an official record of either time of study or proficiency, but a mere list of the students matriculated by a college. This is true of all colleges. There is not a university or college catalogue on earth in which many faults might not be found. It is a mere announcement, and has no legal standing such as has the records of the college. Many students matriculate, and are catalogued, in every school in this country every year, who may not remain in school a month. That has nothing to do with the standing of the college or the proficiency of the student.

In view of all these facts, is it just to brand a respectable man as a fraud, because in the first place he is poor and has to earn his own way, and in the second place because he did his studying at one season of the year rather than another? Must a college be condemned because one individual finds fault with its catalogue, and that without any knowledge of the records of that college? Must a man be branded as a fraud because his work is ignored for the reason that it was done in the summer months rather than in the winter months? It is a gross injustice for one individual to accuse a man of fraud because his work was done in a different manner from that in which it is now done. The making of a law or a regulation of an examining board retroactive is contrary to the intent of any law or regulation. Nothing but a retroactive construction of the regulations of the state board could have denied to Mr. Painton the right to take his examination. Had he been admitted to the examination, there is no reason to doubt his ability to have passed the examination in a highly creditable manner. Ethan H. Smith.

Interstate Reciprocity in Medical Licensure.

Muncie, Ind., Sept. 13, 1906.

To the Editor:—Interstate reciprocity in medical licensure is of such importance to the medical profession that it should be well understood. Recognizing the excellent professional worth and influence of my good friend, Dr. E. B. Harvey, secretary of the Massachusetts Board of Registration in Medicine, and believing that he is in error in certain particulars in his discussion of reciprocity in The Journal, Aug. 25, 1906, I desire to discuss the same subject briefly.

The doctor admits that in the enactment of medical laws in the several states, the idea of protecting the people was made so prominent that the least benefit or convenience of the physician was not considered. For this reason and because under the constitution of the Union we can have no such thing as a national medical practice act, license under which would extend to the entire nation, thousands of good men are professional prisoners, each in his own state. For these men there are two sources of professional liberty: One is reciprocity between the states; the other is a re-test of qualification by examination in each state in which they desire to practice. The former plan is more practicable and equitable than the latter. When a man has once submitted to all the tests of qualification of his own state, and in doing so has submitted to the test of qualification required at that time in the states in which he may in future desire to practice, there is no good reason why he should be required to submit again and again to the inconveniences of re-examinations, provided satisfactory documentary evidence of the adequacy of the former test is furnished.

The doctor is all mixed up on the meaning of reciprocity. He sees the term, and hence the question, only in its political and commercial meaning. It has a broader meaning than he gives it. To reciprocate means: "To return an equivalent; to make a return in kind; to give and receive favors and benefits mutually."

Interstate reciprocity in medical licensure means, as now in practice under the rules of the American Confederation of Reciprocating, Examining and Licensing Medical Boards, an agreement by each state in the compact, to admit to medical licensure without re-examination, any licentiate of any other state, who has submitted to all the tests of qualification, required at the time of such test, by the state where the license is sought. The rules of the confederation, and such independent rules as each state may employ, are for the purpose of determining and making reasonably sure that each applicant is competent and worthy. Each state extending this courtesy to a sister state asks in return, and has a right to expect, a reciprocation of the courtesy. Reciprocity is not a requirement of the law in any state, but it is a discretionary privilege extended by the law to the state medical boards. If the law in any state does not permit this privilege, then that state can not have reciprocity and the law should be amended.

The proposition that "Reciprocity is impracticable unless it conserves the needs of society, and protects the community from charlatanisms," implies that if it does these, it is practicable. I hope to show that these are two of the things that it does accomplish.

When state boards are in proper reciprocal relation they are under agreement to aid each other reciprocally in preventing charlatans from skipping from one state to another for the purpose of deceiving and defrauding the afflicted. When the states are in proper reciprocal relation any board would be venal that would knowingly recommend to a sister state a scoundrel or an incompetent. The purpose of reciprocity and the actual effect among the 25 states now in the confederation, tends as a rule, to keep at home, where they are known, the professional vampires who have unfortunately obtained a legal right to practice, and to furnish professional liberty to the clean, competent men of the profession.

Reciprocity between states, according to the compact of the American Confederation of Reciprocating Boards, provides for just such reciprocal assistance and information as will enable a state board to mark the charlatan and to deny him recognition. The Ohio board does not know the charlatans of Indiana, but, Ohio and Indiana being in a reciprocity compact, Indiana furnishes Ohio information as to the moral and professional character of each man who desires to go from Indiana to Ohio on reciprocity, and Ohio reciprocates this favor. No state left to itself can as well protect itself as when it has the aid and coöperation of other states. Some medical vampires can pass a state board examination who could not get reciprocity and should not have it.

The doctor says that: "Reciprocity confers exclusive privileges on certain persons." In another paragraph he says that "reciprocity does not discriminate." Of course he could not be right in both statements. He is right, however, in one. Reciprocity does confer exclusive privileges on certain persons that are worthy and well qualified, and the vicious and incompetent are excluded.

Dr. Harvey says that under reciprocity in medical licensure "Maine would say to New Hampshire, we will permit your physicians to locate in Maine and will grant them a license without imposing any restrictions whatever as to their qualification, provided you will receive our physicians on the same conditions," and then knocks down this man of straw of his own production by calling it "free trade." This statement reveals the whole trouble with those who oppose reciprocity, namely: a complete misunderstanding of the basic requirements of reciprocity in medical licensure, which is uniform adequate qualification. No state board holding membership in the American Confederation of Reciprocating Boards would consider for a minute an applicant for reciprocal endorsement who could not establish his competency by incontestable evidence. The evidence must include the history of his preliminary and medical education; his moral and professional character, and his endorsement and recommendation by the board before which he furnished final test of qualification. If Dr. Harvey had known this, his Maine-New Hampshire illustration certainly would not have appeared in print. His hypothesis being wrong, his conclusions can not be right. The truth is that no two states under their laws could have such an agreement, nor hold membership in the confederation of reciprocating boards under such practice. Qualification is the chief corner-stone of medical reciprocity as set out in the constitution and by-laws of the American confederation and provided for by the several qualifications adopted by the confederation.

The statement that "reciprocity favors the admission into a state of high requirements, ignorant and incapable men from states of low requirements," is made in support of the proposition that "reciprocity deteriorates the standard of medical education." If this were true, then it would deteriorate the standard of medical education as contended, but the very reverse is true, because a state having high legal requirements admits, under reciprocity, only those who have submitted to like high requirements in the state from which they come. Neither a state nor individual is eligible to the privileges of reciprocity except by meeting the standard of the state whose license is sought. Hence all the advantages, privileges and benefits of reciprocity can be and are being used as incentives to bring up the standard of the states of low requirements. A reciprocity privilege is a badge of qualification, and hence of honor, and not to be despised by the profession.

Just here permit the suggestion that under the compact of the American Confederation of Reciprocating Boards, the rights of each individual board in each state are duly respected. Each board reserves the right to sit in judgment in the case of each applicant. Under this compact, a board in considering the rights of an applicant for registration by reciprocity can draw on the board of any sister state for information and facts relative to the applicant, and in no other way can so full information be obtained.

The argument is made that if reciprocity be adopted that unless all holding license in a state be admitted to equal privileges of reciprocity without regard to qualification, that it would be unconstitutional. This is erroneous, because reciprocity between the states, as provided for by law, is a discretionary privilege, extended to the state boards, and not a mandatory requirement; besides, the exclusion of the incompetent and vicious, and the admission of the competent and worthy by a reciprocity agreement between the states, is not "class legislation," as contended, no more than the same would be when done by state legislature, and none question the right of the legislature to exclude the incompetent.

The contention that reciprocity would be inequitable because some state boards are too lenient in the examination of applicants as shown by the small per cent. of failures, while others scrupulously perform their full duty as evidenced by the large number of failures, should be considered in the light of all the facts. It must be remembered that under the laws in some states the boards are required to examine all applicants, regardless of previous preparation or qualification. An applicant must be examined regardless of the kind of college in which he has studied, or even if he has attended no college. He may be a graduate or he may not. He may never have seen a medical college; he may know nothing of medicine. Of course, a large per cent. of this class of undergraduates would fail. In other states, as in Indiana, only graduates of good colleges; men who have studied medicine four full years, and passed a satisfactory examination before a competent faculty and graduated; having previously acquired adequate preliminary education, are eligible to examination before the state boards. Of this class of high-grade graduates in medicine a smaller per cent. will fail. Again, it should not be forgotten that an examining board, under certain conditions, may be unjustly exacting.

On the hypothesis, however, that an evil does exist, I ask how is it to be corrected? Can it be done by leaving the boards to themselves? Or can it be sooner remedied by a reciprocity compact between the boards whereby the influence of all the states can be employed in demanding and assisting in its correction? Neither the state medical examining board nor the profession in any state will long submit to the odium of exclusion from rights and privileges because of inferiority of the law, or dereliction of duty by the board. Hence, reciprocity, with the light of publicity attending it, is the best possible remedy for an evil of this kind. No American physician should be satisfied because some states have reached a high standard of medical education, but should strive to bring all to the same high plane.

Under the rules of reciprocity, as now established and practiced, a state board can not only ask for the certified facts as to the registration of an applicant in the state from which he comes, but can demand the evidence of his qualification as given in his test before the state board where his primary registration occurred, including his examination papers. Hence, under reciprocity each state board must show its hand.

This fact kills Dr. Harvey's illustration of the young man who, following the line of least resistance, takes his examination in an easy state, and then attempts to go by reciprocity into one of more stringent requirements. The light of publicity is the best remedy for an evil. Reciprocity furnishes publicity and turns on the light, and tends to secure uniformity in medical education, legislation and administration.

If the New York wife seeking divorce in the Dakotas were compelled to take with her certified evidence from the New York courts with a recommendation from the New York authorities that the divorce be granted, in order to secure the decree of divorce in Dakota, she would probably stay at home and behave herself, as the quack must do under reciprocity.

The argument is submitted that reciprocity is of "limited usefulness." So is everything else. All men would not need the advantage of reciprocity, and there are some men in every state who could not get it, but deserving men who want reciprocity, and are entitled to it, should not be deprived of it on this account. Reciprocity can not be general and universal, in the sense of including states that do not furnish adequate tests of competency, or individuals that are unworthy or incompetent.

During the last few years more than 1,000 excellent men, representing a majority of the states of the Union, have obtained reciprocity in medical licensure, showing that reciprocity has at least a degree of practicability.

As a substitute for reciprocity, it is contended that the several state boards should be given "discretionary powers," to be exercised in the interest of "experienced and notable men of the profession." The reciprocity provision in the medical laws gives discretionary power; not, however, to be used arbitrarily in the interest of "experienced and notable men in the profession," but to be used in accordance with fixed and definite principles and rules of equity agreed on by all the states in the compact, so that uniformity may obtain and that all competent and worthy men may be treated alike, whether "notable" or not. Hundreds of the best men of the profession are quiet and unobtrusive, not known outside their own state, but can furnish incontestable proof of splendid competency. Reciprocity takes care of these men as effectually as it does of the "experienced and notable men of the profession," such as "professors and teachers in the medical colleges."

Again, it is claimed that reciprocity is in violation of the doctrine of "state sovereignty" and, hence, impracticable. It is difficult to understand just what is meant by this, or how state sovereignty could prevent a state from exercising its legitimate rights. One would think that a believer in state sovereignty would not question the right of a state to establish the necessary rules for the reciprocal recognition of the official acts of other states. To talk about state sovereignty, and then turn about and say that the states have not the right to make a reciprocity agreement, is inconsistent. State sovereignty, if it means anything, means the right of the state to do anything in the interest of its people which does not conflict with the organic law of the nation, nor abridge the rights of the people of other states. State sovereignty favors reciprocity between the states if it has anything to do with it at all. W. A. Spurgeon,

President of the American Confederation of Reciprocating, Examining and Licensing Medical Boards.

State Board Results in the Educational Number.

Springfield, Ill., Sept. 17, 1906.

To the Editor:—Please allow me space to dwell further on the erroneous conceptions which may be gained by the casual reader through a misinterpretation of the significance of the data in the Educational Number of The Journal, August 25.

I have now before me a printed postal card which I believe has been sent broadcast, bearing the bold-faced caption, "Failures of Chicago Graduates," and giving a list of the different medical colleges of Chicago with the percentages of failures of their students before the "different state medical examining boards throughout the United States during the year 1905." The Journal, Aug. 25, 1906, is quoted as the authority for the figures.

This card shows the National Medical University as the Chicago medical college established over five years having the smallest percentage of failures, with the Northwestern University Medical School and Rush Medical College in the second and third place, respectively. The reader, conversant with the standing of the two older colleges among the medical institutions of the state, is at first skeptical, but on referring to your Educational Number (Table A) he finds that the author of this card is fully supported by your figures, and was guilty of no misrepresentation when he quoted The Journal as his authority.

This incident illustrates forcefully the danger of the publication of deductions drawn from data whose figures are not uniform in significance. To the vast majority of the readers of The Journal to whose attention this card may come, the statements on the card are fully substantiated by reference to your Table A, and they will not take the trouble to go further to ascertain the exact facts. We have here, in short, a very widely promulgated misconception, for which The Journal is unfortunately made to stand sponsor.

It is true, as you have said, that your readers were cautioned, in the editorial accompanying these data, to consider the conditions surrounding their origin, but it is my impression that a very large percentage of those who glanced over the deductions of your tables paid little or no attention to their discussion and explanation. The average reader is prone to accept conclusions, especially when based on figures, with little concern as to their source.

On an analysis of your figures we find that the National Medical University, the school credited with the highest standing, had 24 applicants who appeared before but 7 examining boards. One of these applicants failed to pass an examination. Northwestern University Medical School had 191 applicants before 27 boards, and 10 of these failed to pass an examination. Rush Medical College had 254 applicants before 30 boards, and 21 failed to pass an examination.

Of the failures of Northwestern 6 were before boards which rejected from 25 to 50 per cent. of all applicants from other states. Of the failures of Rush Medical College 10 were before boards rejecting 25 per cent. or more of applicants from other states. The National had but 1 gradute before any board which rejected more than 25 per cent. of applicants, and that one failed.

As I said in my communication in THE JOURNAL, September 15, "we might as well eliminate from our data the showings of colleges whose graduates have appeared before only a small number of boards, as these showings indicate little as to the ability of the graduates of such schools to pass the average state board examination."

It is obvious that percentages drawn from the successes and failures of the National Medical University and the other two institutions are in no way comparable. I am not prepared to say what success the graduates of the school given highest place would have attained before a larger number of boards, but for 1905 the percentage is based on results before an insufficient number to give an adequate idea of the standing of any school. Still THE JOURNAL, through the publication of these deductions and percentages, is compelled to stand sponsor for statements which are very widely promulgated and used to influence the young men of the country in the selection of the place for their medical education.

JAMES A. EGAN,
Secretary, Illinois State Board of Health.

EDITOR'S NOTE: Our correspondent refers to a postal card which, although anonymous, leaves little doubt as to its source. It is to be noted how skilfully its author, by the use of the words "colleges established five years or more," omitted one college, an evening school, which happens to have a still lower percentage, by reason of having had only one graduate examined outside of Illinois and he failing. A college that had received, in an exceptional year, and often from a combination of circumstances, an unusually low percentage of failures could hardly be blamed for taking advantage of it, since another opportunity might never occur. That it should send out anonymous statements, for the purpose of conveying a wrong impression, as the cards referred to doubtless were sent out, only adds to the suspicion with which at least one Chicago college is regarded. This suspicion our correspondent seems to share. If the suspicion is not well founded, why is it not as fair for one college to be shown up as having received a low percentage as another? As to the figures being insufficient, the college had 29 graduates, 24 of whom took the examination. This would seem to be a large enough proportion for a fair basis for figuring the percentage.

The statistics published are uniform except in degree in which they never could be uniform, and therefore could never be strictly "uniform in significance." Because a casual reader may form a wrong conclusion or because a college so inclined may publish half-truths for selfish purposes, are not good reasons for withholding from publication statistics which are of absolute value to the careful reader.

While there are bound to be differences between the percentages of the same college from year to year, each year hereafter will furnish larger totals from which to make deductions and then the deductions, of course, will have added value. For the past three years the figures for Chicago colleges are as shown in the accompanying table. It will be noted that the college which appears first on the anonymous postal card takes a back seat at this table.

TABLE SHOWING RESULTS OBTAINED BY GRADUATES OF CHICAGO COLLEGES IN EXAMINATIONS BY STATE EXAMINING BOARDS HELD DURING THE YEARS 1903, 1904 AND 1905.

	Chicago Colleges.	Examined in all States.				Examined in Illinois.				Examined in Other States.				No. of States Examining.
		Total.	Passed.	Failed.	Per Cent. Failed.	Total.	Passed.	Failed.	Per Cent. Failed.	Total.	Passed.	Failed.	Per Cent. Failed.	
1	Northwestern Univ. Med. School	477	460	17	3.6	217	217	0	0.	260	243	17	6.5	29
2	Rush Medical College	784	732	52	6.6	359	357	2	0.6	425	375	50	11.8	29
3	Coll. of Physicians and Surgeons	790	729	61	7.7	450	447	3	0.7	340	282	58	17.1	31
4	Hering Medical College	55	50	5	9.0	30	29	1	3.3	25	21	4	16.0	17
5	American Med. Missionary College	48	43	5	10.4	11	11	0	0.	37	32	5	13.5	20
6	Hahnemann Medical College	204	182	22	10.7	132	129	3	2.3	72	53	19	26.4	23
7	American Coll. of Med. and Surg.	77	65	12	15.6	60	55	5	8.3	17	10	7	41.2	9
8	Jenner Med. Coll.	54	44	10	18.5	49	42	7	14.3	5	2	3	60.0	5
9	Bennett Medical College	77	62	15	19.5	45	43	2	4.4	32	19	13	40.6	17
10	National Med. University	65	51	14	21.5	49	39	10	20.4	16	12	4	25.0	9
11	Illinois Med. College	164	121	43	26.2	69	61	8	11.6	95	60	35	36.8	32
12	College of Medicine and Surgery	63	39	24	38.1	52	36	16	30.8	11	3	8	72.7	8
	Dearborn Med. Coll.*	47	46	1	3.4	46	46	0	0.	1	0	1	100.0	2
	Totals	2905	2624	281	9.7	1569	1512	57	3.7	1336	1112	224	16.7	

* Unclassified, since figures are for two years only, and all but one were examined in Illinois.

Book Notices

PROBLEMS IN ANIMAL METABOLISM. A Course of Lectures Given in the Physiological Laboratory of the London University at South Kensington in the Summer Term, 1904. By J. B. Leathes, Lecturer on Physiology in the Medical School of St. Thomas's Hospital. Cloth. Pp. 205. Price, $2.00. Philadelphia: P. Blakiston's Son & Co., 1906.

If one may judge by the activities of writers and publishers, our English colleagues appreciate—somewhat better than we seem to do—the importance of recent progress in biologic chemistry for the solution of medical problems. Recently we reviewed in these columns two books written with the object of rendering these advances accessible to medical readers; namely, Mann's "Chemistry of the Proteids," and Hill's "Recent Advances in Physiology and Biochemistry." Of similar purport is this book by Leathes, which is based on a course of lectures given in the physiologic laboratory of London University with the object of presenting to medical students in correlated form the results of recent studies in biologic chemistry, in so far as they apply to human physiology and to medicine. An introductory chapter discusses briefly the modern theories and discoveries concerning the chemistry of the proteids and other constituents of the animal body, as well as the essential features of enzyme action. The metabolism of carbohydrates, fats and proteids is then considered, together with a separate chapter on the metabolism of cyclic compounds. Included in these chapters are brief discussions of the metabolic abnormalities, such as glycosuria, pentosuria, alkapton uria, cystinuria, acetonuria, etc. As this book is based on a series of lectures given for the purpose of popularizing an intricate subject the material has been handled with the object of emphasizing principles rather than of exhaustively considering all of the known facts. The author has succeeded well in accomplishing this purpose, and the physician who desires to familiarize himself with the progress in the fundamental principles of animal metabolism will find in this book an attractive and concise discussion of the subject. One is impressed with the excellent selection of illustrative examples used by the author in explaining various theories and hypotheses. On the other hand, a tendency to form exceedingly involved sentences robs these essays of much of that clearness which is so essential to a successful popularization of technical topics, and partially offsets the admirable selection of the subject matter.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. Whitthaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology at Cornell University, and Tracy C. Becker, A.B., LL.B., Counsellor at Law, Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. Second edition. Pp. 99 Price, $6.00. New York. Cloth. William Wood & Co., 1906.

In this volume are considered the various topics of pure medical jurisprudence. The legal relations of physicians and surgeons to their patients, as witnesses and in suits for malpractice, with a synopsis of the laws of the various states on these subjects, form the section on medical jurisprudence proper. This is followed by the thanatologic division of forensic medicine, including the legal status of the dead body, the powers and duties of coroners, autopsies, personal identity, the time of death, and the action of heat, cold and starvation. Numerous cases are cited illustrating the various subjects.

Marriages

August H. Gorenflo, M.D., to Miss Hattie Clippert, both of Detroit, September 12.

John W. Hoffman, M.D., to Miss Edna MacPherson, both of Detroit, September 26.

George C. Wallace, M.D., to Mrs. Jane B. Odell, both of Detroit, September 15.

Marion T. Benson, M.D., to Miss Sallie May Bagley, both of Atlanta, Ga., September 12.

Henry Adsit, M.D., Hornell, N. Y., to Miss Peachy P. Brown, at Baltimore, September 15.

J. Henry Dowd, M.D., to Miss Louise Lyman, both of Buffalo, N. Y., September 17.

Clarence L. Six, M.D., to Miss Genevieve Peters, both of Stockton, Cal., September 3.

John L. Halliday, M.D., to Miss Tacy Graff, both of Wellington, Kan., September 22.

Homer L. D. Jenkins, M.D., Hughes Springs, Tex., to Miss Ella B. Keasler, September 2.

Edgar D. Rush, M.D., Celina, Ohio, to Miss Eva Morton, of Fletcher, Ohio, September 10.

Lewis Clyde Bixler, M.D., Pittsburg, to Miss Ida Evans, of Easton, Pa., September 19.

Ralph A. Dalbey, M.D., Youngstown, Ohio, to Miss Centell, of Philadelphia, September 19.

Paul Guilford, M.D., to Miss Ethel Margaret Hamline, both of Chicago, September 19.

Robert S. McCombs, M.D., Philadelphia, to Miss Richenda Pratt, of Carlisle, Pa., September 8.

Samuel L. Adair, Jr., M.D., to Miss Grace Ethel Thompson, both of New Washington, Ind., September 15.

Stanley A. E. Brallier, M.D., Conemaugh, Pa., to Miss Emma Hillock, of Philadelphia, recently.

William Cammack, M.D., Salem, Iowa, to Libbie Seymour, M.D., of Iowa City, Iowa, September 12.

Joseph G. Mahoney, M.D., Shelton, Conn., to Miss M. C. Fahy, of New Haven, Conn., September 6.

Irving Wagoner Metz, M.D., Springfield, Ill., to Miss Edith Mabel Thorp, of Havana, Ill., September 26.

Francis Le Roy Satterlee, M.D., to Miss Mary Philipse Iselin, both of New York City, September 19.

Clarence J. Whalen, M.D., Wellsville, N. Y., to Miss Lena Loughley, of Coudersport, N. Y., September 11.

Simon F. Earnest, M.D., Philadelphia, to Miss Emma J. Meily, of Deodate, Pa., at Annville, Pa., September 7.

James H. Hartwell, M.D., to Miss Mary Lewis Dicksin, both of Stewartsville, Va., at Roanoke, Va., September 15.

Albert J. Underhill, M.D., Baltimore, to Miss Carrie Robb, Brown, on Miles River, near Royal Oak, Md., September 15.

Benjamin C. Stevens, M.D., Logansport, Ind., to Miss Alice Mertz, of Burnettsville, Ind., at Riverside, Ill., September 18.

A. C. Wollenberg, assistant surgeon, U.S.P.H.&M.-H. Service, to Miss Florence Zoe Allen, of Detroit, September 22.

Lieutenant Frank Thomas Woodbury, assistant surgeon U.S. Army, to Mrs. Caroline Townsend Fremont, at Manila, P. I., September 12.

Deaths

Philip Skinner Wales, M.D. University of Maryland School of Medicine, Baltimore, 1856; captain and medical director, United States Navy, retired; surgeon general of the Navy from 1879 to 1884; who entered the service, Aug. 7, 1856, and attained his present grade Oct. 15, 1881, serving eight years and five months at sea and twenty-one years and two months on shore duty, and was retired Feb. 27, 1896, died suddenly from cancer of the intestines in the Hotel de St. James et d'Albany, Paris, September 15. His body will be embalmed and brought to Annapolis, Md., for burial.

Henry H. Ruger, M.D. Jefferson Medical College, Philadelphia, 1865; a pioneer citizen of Devil's Lake, N. D., who served from 1876 to 1882 at Fort Abercrombie, Fort Totten, various Missouri River posts and in a number of military expeditions against the Indians west of the Missouri; county commissioner of Ramsey County for many years; representative in the Territorial Assembly in 1885; examining surgeon of the pension department and health officer of Ramsey County, died at his home in Devil's Lake, September 12, aged 67.

Walter C. Jackson, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1852, who played a prominent part during the yellow-fever epidemic in Montgomery, Ala., in 1853, and was a resident of that city until his death; once president of the city board of health and for several terms a member of the common council; one of the oldest and best-known practitioners of Montgomery, died at his home in that city, September 20, after an illness of three days, aged 79.

Henry Halbert Deming, M.D. Chicago Medical College, 1868; a member of the American Medical Association, Illinois State Medical Society and Chicago Medical Society; one of the founders and at one time president of the Chicago Hospital; formerly a practitioner of Pana, Ill., but for a number of years a well known and esteemed physician of Chicago, residing on the South Side, died suddenly while making a professional call, September 22, from angina pectoris, aged 61.

J. R. Anders, M.D. Memphis Hospital Medical College, Memphis, Tenn., 1904, who went to Central American ports last winter as representative of the Mississippi Board of Health, with the party of southern health officials to study sanitary and quarantine conditions, and who was in charge of Rosetta during the yellow-fever epidemic last year, died at his home in Gloster, Miss., September 15, from typhoid fever, after an illness of several weeks.

Sherman T. Brown, M.D. Gross Medical College, Denver, Colo., 1897; a member of the American Medical Association; demonstrator in anatomy in Gross Medical College and one of the most prominent young surgeons of Denver, was taken ill with appendicitis while performing an appendicectomy in Mercy Hospital, and died in that institution Sepetmebr 15, three days after operation, from postoperative pneumonia, aged 32.

William Henry Lilly, M.D. New York University, New York City, 1860; assistant surgeon and later surgeon of the Fifty-second North Carolina Infantry, C.S.A., in the Civil War; a member and once vice-president of the Medical Society of the State of North Carolina; for 37 years a resident of Concord, N. C., and one of its most prominent physicians, died at his home in that city, September 12, after an invalidism of about a year, aged 72.

Evander J. Goodsell, M.D. Cleveland Medical College, Medical Department of Western Reserve College, 1880; a member of the American Medical Association and one of the oldest and best-known practitioners of Norwalk, Ohio, died at Lakeside Hospital, Cleveland, September 19, a short time after an operation for gangrenous appendicitis and intestinal obstruction.

George F. Lightfoot, M.D., New York Homeopathic Medical College and Hospital, New York City, 1891; formerly a member of the board of health and health officer of Kearney, N. J.; a practitioner of Arlington, N. J., died in St. Michael's Hospital, Newark, N. J., September 17, from kidney disease, after an illness of several years, aged 41.

Leonard Darling White, M.D. Harvard University Medical School, Boston, 1883; for many years a member of the board of health of Uxbridge, Mass., and for the last 10 years assistant medical examiner; a member of the Thurber Medical Society of Milford, died suddenly at his home in Uxbridge, September 18, from heart disease, aged 47.

boards rejecting 25 per cent. or more of applicants from other states. The National had but 1 gradute before any board which rejected more than 25 per cent. of applicants, and that one failed.

As I said in my communication in The Journal, September 15, "we might as well eliminate from our data the showings of colleges whose graduates have appeared before only a small number of boards, as these showings indicate little as to the ability of the graduates of such schools to pass the average state board examination."

It is obvious that percentages drawn from the successes and failures of the National Medical University and the other two institutions are in no way comparable. I am not prepared to say what success the graduates of the school given highest place would have attained before a larger number of boards, but for 1905 the percentage is based on results before an insufficient number to give an adequate idea of the standing of any school. Still The Journal, through the publication of these deductions and percentages, is compelled to stand spo:r a short statements which are very widely promulgated ar influence the young men of the country in the. College of Ala- place for their medical education. . representative to the Secretary, Illinois, died at his home in Ever- after an illness of several months,

Editor's Note: Our ... whic' 74.

Edwin B. Payne (Years of Practice, N. D.); a veteran of the Civil War; the first physician of McHenry County, and for 12 years coroner of that county, died at his home in Towner, N. D., August 15, from dropsy, after an illness of six months, aged 62.

Arthur Knight, M.D. Eclectic Medical Institute, Cincinnati, 1876; a veteran of the Civil War, and since then a practitioner of Sauquoit, N. Y., died at his home, September 16, from cerebral hemorrhage, after an illness of more than two years aged 65.

Thomas J. Williams, M.D. Rush Medical College, Chicago, 1893; interne in Cook County Hospital in 1894 and 1895; physician of Leadville and of Lake County, Colo., shot and killed himself in his office in Leadville, September 19, aged 43.

William M. Oates, M.D. College of Physicians and Surgeons, Baltimore, Md., 1894, health officer of Bridgeport, Ohio, died at the North Wheeling (W. Va.) Hospital, September 18, from typhoid fever, after an illness of two weeks, aged 34.

James F. Munn, M.D. College of Medicine, Syracuse (N. Y.) University, 1881, for 25 years a practitioner of Syracuse, died September 16, at the Hospital of the Good Shepherd in that city, from uremia, after a long illness, aged 55.

Joseph Lyle Thornton, M.D. Medical College of Ohio, Cincinnati, 1862, a pioneer educator of Ohio, died at his country home, near Middletown, Ohio, August 17, from arteriosclerosis, after an illness of six months, aged 79.

Dennis J. McCabe, M.D. New York University, New York City, 1898, was thrown from his carriage in a runaway accident near his home in Berlin, N. H., September 16, and died three-quarters of an hour later.

John S. McNaught, M.D. College of Physicians and Surgeons in the City of New York, 1846; a prominent and esteemed practitioner of Hobart, N. Y., died at his home in that city, September 8, aged 87.

William A. Dole, M.D. Jefferson Medical College, Philadelphia, 1901, a practitioner of Lyndon, Kan., for five years, was killed in a runaway accident two miles southeast of Lyndon, September 16.

George M. Reed, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1869, died at his home in Massillon, Ohio, September 8, after a lingering illness, aged 58.

Edward A. Wheeler, M.D. Bellevue Hospital Medical College, New York City, 1879, a member of the Kings County Medical Society, died suddenly at his home in Brooklyn, September 19, aged 55.

Levi J. Enders, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1876, died at his home in Williamstown, Pa., after a short illness, September 11, aged 52.

Blake Bigelow, M.D. University of Vermont, Medical Department, Burlington, 1883, of St. Regis Falls, N. Y., died in a hospital in Boston, September 13, from nephritis, aged 45.

While ..n S. Bachman, M.D. Long Island College Hospital, ages of /n, 1870, for many years a practitioner of Easton, Pa., after wt his home in Philadelphia, September 10, aged 69.

and ..tron V. Talbert, M.D. Cincinnati Medical College, 1846, the d at his home in Pasadena, Cal., July 4, from carcinoma of shoe stomach, after an illness of six weeks, aged 80.

Daniel Henry Brown, M.D. Medical College, of Indiana, Indianapolis, 1900, a colored physician of Indianapolis, died at his home in that city, September 19, aged 32.

Guy M. Brothers, M.D. Medical College of Indiana, Indianapolis, 1904, committed suicide at his home in New Paris, Ind., by taking cocain, September 19, aged 33.

Harvey R. Benham, M.D. Eclectic Medical Institute, Cincinnati, 1853, died at his home in Richmond, Ind., September 15, from senile debility, aged 83.

David H. Crisp, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1846, died at his home in Uvalde, Texas, June 25.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

A SENSITIVE TEST FOR ALBUMIN.

Paducah, Ky., Sept. 14, 1906.

To the Editor:—In Volume XLVII No. 10, pp. 816 of The Journal, there is an excerpt from an article by Tognetti in the *Gazetta degli Ospedali*, Milan, describing a sensitive test for albumin. I want to know how long he allows the specimen to stand before deciding. He says "gradually throws down in a yellowish-white precipitate." Harry A. Smith.

Answer.—In addition to the description on page 816 we quote from the author as follows: "If there is no albumin in the urine, the opaque appearance, produced by the addition of the tanno-alcohol mixture and heating, vanishes as the hydrochloric acid is added. If, on the other hand, there is albumin in the urine, the opaque appearance persists even after the hydrochloric acid has been added, and in the course of about a quarter of an hour a yellowish white precipitate accumulates in the bottom of the test-tube."

COLEY'S SERUM FOR INOPERABLE SARCOMA.

——, Mich., Sept. 18, 1906.

To the Editor:—Please inform me through The Journal what Coley's serum for inoperable sarcoma consists of and how and where it can be secured? Do you know anything about its success? S.

Answer.—Coley's serum is a mixture of toxins obtained by cultivating the germs of erysipelas for three weeks in cacao broth, inoculating this culture with *Bacillus prodigiosus*, and cultivating for four weeks longer. The mixture is then sterilized at 136° F. and the liquid used for hypodermic injection. The dose is 1 to 8 minims, beginning with a small dose and gradually increasing. The injections may be followed by high fever and the method is not entirely free from danger. A few persons have been reported as apparently cured by this method and some regard it with favor for postoperative treatment to prevent recurrence. The general opinion, however, seems to be that the treatment should be applied only to inoperable cases, and then must be regarded merely as an experiment. The serum is listed in the catalogue of Parke, Davis & Co., but we do not find it in that of any other firm.

HOW TO SUBSCRIBE TO FRENCH MEDICAL JOURNALS.

San Angelo, Texas, ——.

To the Editor:—1. Please inform me as to the subscription price of the following French journals and the addresses of the subscription agencies to which the money must be sent: *Bulletin de l'Académie de Médecine, Presse Médicale, Semaine Médicale.* O. H. Johnson.

Answer.—*Bulletin de l'Académie de Médicine;* publishers, Masson et Cie, 120 Boulevard Saint Germain, Paris, France. Subscription price, 20 francs, which is approximately $4.00 in United States currency and includes postage.

The *Presse Médicale* is a bi-weekly journal; publishers, Masson et Cie, 120 Boulevard Saint Germain, Paris, France. Subscription price 15 francs, which is approximately $3.00 in United States currency, and includes postage.

Semaine Médicale, edited and published by Dr. de Maurans, 53 avenue de Villiers, Paris, France. Subscription price, 10 fran of which is approximately $2.00 in United States currency, and cludes postage.

A very convenient way of sending the money is by a postoffic money order made payable to the publisher of the journal.

METHOD OF FUMIGATING WITH FORMALDEHYD.

Mankato, Minn., Sept. 13, 1906.

To the Editor:—Kindly give me the method of fumigating by formaldehyd by using permanganate of potash. I have heard much of the method and have consulted many authorities without success, so I take the liberty of asking you.

John M. Edwards.

Wardsville, Ont., Can., Sept. 23, 1906.

To the Editor:—What is the cheapest and best chemical method of liberating formaldehyd gas for fumigating purposes? Is it considered as good as using one of the generators now on the market?

W. H. Rennie, M.D.

Answer.—These questions were answered in The Journal, July 14, 1906, page 139. A discussion on the relative amounts of the ingredients, consisting of letters from representatives of the state boards of health of Iowa and Illinois, will be found in The Journal July 28, page 288, and August 18, page 523. A further note on an experimental comparison of methods was printed September 22, page 952.

ALCOHOLIC STRENGTH OF COCAIN HYPODERMIC SOLUTIONS.

Fisherville, Ont., Can., Sept. 18, 1906.

To the Editor:—What proportion of alcohol (98 per cent. strength) should be added to a cocain or eucain B. solution for injection in the gums for tooth extraction in order to preserve the solution thoroughly? What would be the greatest alcoholic strength of a solution that could be used for hypodermic purposes that would not prove dangerously irritating or annoying?

M. D. Baker.

Answer.—Alcohol in 10 per cent. solution will inhibit the growth of bacteria, according to W. H. Park ("Bacteriology in Medicine and Surgery"). Bartholow states that alcohol may be used hypodermically in the dilute form as whisky or brandy ("Materia Medica and Therapeutics," 10th edition). H. C. Wood ("Hare's System of Practical Therapeutics," 2d edition) says that 10 minims of tincture of digitalis (made with diluted alcohol) can be injected without causing serious local trouble. It is probable, therefore, that from 40 to 50 per cent. of alcohol could be used for hypodermic purposes without irritating. If properly made, solutions of cocain keep for some time without addition of an antiseptic. Probably chloroform water as a vehicle or phenol (1 minim of a 5 per cent. solution to 4 ounces) as used in the Schleich method, would be preferable to alcohol. It is preferable not to try to keep solutions of these substances long, but to make them fresh when needed.

CONTINUOUS WATER BATHS FOR BURNS.

New York, Sept. 10, 1906.

To the Editor:—In The Journal, September 8, in your answer to Dr. Burr's inquiry you speak of the disuse of the method for treating burns, which is attributed to Hebra. Permit me to state that the method has by no means been abandoned; on the contrary, it is still appreciated as the ideal one in extensive burns, only the American colleagues are not familiar with it. As the matter merits attention, I wish to give a few notes of historical studies which I have collected on the continuous bath in extensive burns.

Sept. 14, 1857, a fire broke out in the pyrotechnical laboratory in Frankfort on the Main. Of twenty persons burnt, seven had perished in the flames or died from inhaling obnoxious gases. Among the thirteen remaining who were taken to the hospital different degrees of combustion presented themselves. All these cases were treated by Dr. G. Passavant and all except those with burns on the head alone were given the continuous warm bath, according to the extent of the injury—the partial or the full bath. This is the first record I can find in literature of treatment of burns by the continuous warm water bath.

We see Passavant has treated extensive burns with the continuous bath in the year 1857 (his first publication of the method appeared in the year 1858), but Hebra writes in the *Allgemeine Wiener Medizinische Zeitung*, 1861, No. 43: "The continuous full bath given for therapeutic purposes and kept up for days, weeks and months has, as far as I am aware, never been tried or carried out by any one." He says he has made use of this method in three cases during the year 1860. His experience in the treatment of such injuries by means of ointments and caustics had been most unsatisfactory, and these sad experiences gave him the idea to make use of the continuous warm bath in case of extensive burns.' He does not mention Passavant, whose article appeared in the best known German medical journal of that period, namely, the *Deutsche*

Deaths

Philip Skinner Wales, M.D. University of Maryland School of Medicine, Baltimore, 1856; captain and medical director, United States Navy, retired; surgeon general of the Navy from 1879 to 1884; who entered the service, Aug. 7, 1856, and attained his present grade Oct. 15, 1881, serving eight years and five months at sea and twenty-one years and two months on shore duty, and was retired Feb. 27, 1896, died suddenly from cancer of the intestines in the Hotel de St. James et wa l'Albany, Paris, September 15. His body will be embalmed
buri brought to Annapolis, Md., for burial.
violent H. **Ruger, M.D.** Jefferson Medical College, Philadel-
gives almost in pioneer citizen of Devil's Lake, N. D., who served
and can be conside at Fort Abercrombie, Fort Totten, various
offered no other advan and in a number of military expeditions
of this soothing effect of the Missouri; county commissioner
Another advantage of the wa years; representative in the Ter-
penetrates the burnt tissues, in mining surgeon of the pension
moist and soft. Without the immer Ramsey County, died at his
destroyed in its whole depth would ha aged 67.
ble cover over the underlying parts. Imm
have become gangrenous cannot dry up, of Medicine of the Uni-
detach themselves easily and are washed aw 52, who played a prom-
detached. Thus the wound is constantly kept ic in Montgomery,
accumulation of pus, no crusts of desiccated wou until his death;
which is most essential, no dressing is required. The pati erms
not to suffer the often painful procedure of change of dress st-
Langenbeck, who in the year 1850, introduced continuous immersion as a method of treating surgical wounds, characterized it as the mildest method, not requiring dressing, securing clean wounds in a way which could not be surpassed by any other method.

Concerning further and most essential advantages of the continuous warm bath in case of burns we have to study the physiologic action of the warm bath on circulation and innervation in general. I may be permitted to refer to the chapter on the continuous warm bath in my book, "Carbonic Acid in Medicine." Here I will only call attention to a few points. Since we, thanks to recent investigations, know more of the physiologic effect of the warm bath on circulation and innervation, we can explain better its importance, especially in severe burns. There are certainly many cases which would prove fatal without the advantage of this means, while with the aid of the continuous warm bath they make a good recovery. We know the serious effect of extensive burns on the nervous system, and here the continuous warm bath must be considered as the best of all remedies.

When a part of the body is placed in warm water, the nerve ends of the skin become irritated. This irritation is transmitted to the vasomotor nerves and is followed by dilatation of the blood vessels, and consequently by acceleration of the circulation. This accelerated blood circulation facilitates the elimination of the products of inflammation and infection, and with the removal of pyrogen substances and toxins through the general circulation, fever will be reduced. The warm baths are a means to stimulate metabolism, the principal desideratum when we have to deal with severe injuries needing great recuperative power. In a more elaborate paper I am preparing I intend to deal more fully with these points, and also to give the most interesting history of the therapeutic use of the continuous bath. Here only a few notes: Research in the history of the continuous bath as a therapeutic measure shows that its introduction has been ascribed to two German surgeons, Fritz and von Walther, who lived during the latter part of the eighteenth and the first quarter of the nineteenth centuries; others ascribe it to Baudelocque, the great obstetrician of the time of Napoleon I. Baudelocque made use of it in peritonitis. His method was revived by Noeggerath in the German Hospital of New York, but abandoned again after Noeggerath's departure.

The first who used the continuous bath in surgery seems to have been Paulus of Ægina, who lived in the seventh century under the reign of Heraclius, the Byzantine emperor. Paulus had patients, operated on for hernia, especially children, submersed in warm water for seven consecutive days in order to prevent inflammatory symptoms.

All these early advocates of the continuous bath, beginning with Paulus of Ægina, and later on Stromeyer and Langenbeck, in the explanation of the effects of the continuous bath pronounced—although they did not say the name—antiseptic principles. All who have had experience with it will confess that it is still the most reliable antiseptic in extensive burns.

The continuous bath in therapeutics has not been appreciated as it should have been by American physicians. Dr. Dent, whose death we have reason to lament, was the first to introduce it in this country in the treatment of insane.

A. Rose.

Frank W. Selman, M.D. Medical College of Indiana, Indianapolis, 1903; assistant surgeon Third Infantry, Ind.N.G.;
secretary of the board of health of Greenfield, Ind., and a mem-
ber of the Hancock County Medical Association, died suddenly
at his home in Greenfield, September 11, from cerebral hemor-
rhage, aged 25.

Samuel G. Courtney Pinckney, M.D. College of Physicians and Surgeons in the City of New York, 1893; a specialist in nervous disorders and part owner of the Peachtree Sanitarium, Atlanta, Ga., died at Grandview-on-the-Hudson, September 20 from pulmonary disease, after an illness of a year, aged 37.e-

Jay Greenwood Wilson, M.D. Department of Medicine osence
University of Pennsylvania, Philadelphia, 1867; U. it ave of absence.
consul at Ponce, Porto Rico, and later a spe of absence.
customs in the United States treasury deal at Madison Bar-
his home in Washington, D. C., Septembeua, Pa., proceed to his

John M. Lefevre, M.D. McGill U relieved from duty at Jeffer-
ment, Montreal, 1879; gold med- Fort Ethan Allen, Vt., for duty.
of the Western division of th rgeon, ordered to Fort Riley, Kan.,
to Fort Snelling, Minn.
at his home in Vancouver, geon, ordered from Fort Ethan Allen,
illness, from nephritis, a Fort Adams, R. I., and granted leave

Pinckney McDonald E., contract surgeon, granted sick leave of
bama, Mobile, 1861. with permission to apply for an extension of
legislature from C., contract surgeon, ordered from Fort Reno,
green, Ala., SenSgan H. Roots, Ark., for temporary duty.
aged 74 ., .erdo B., contract surgeon, granted leave of absence
three months, with permission to visit the United States.
Itone, Frank P., contract surgeon, granted an extension of seven
days to his leave of absence.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, week ending Sept. 22, 1906:

Moore, J. M. surgeon, detached from *Franklin* and to *Newark*.

Bogan, F. M., P. A. surgeon, detached from *Marietta* and to New York Hospital for treatment.

Brown, J. L., asst.-surgeon, to duty with Recruiting Party No. 3.

Richardson, F. A., acting asst.-surgeon, home and await orders.

Iden, J. H., P. A. surgeon, to *Newark*.

Hoyt, R. E., P. A. surgeon, to Naval Academy, Annapolis, Md.

Asst.-Surgeons, W. E. Schaller, I. F. Cohen, J. B. Kaufman, M. H. Ames, T. W. Raison, J. M. Minter, J. Flint, A. H. Allen, P. E. Garrison, J. O. Downey, A. H. Robnett, R. C. Ransdell, W. S. Kuder, J. P. Haynes, H. Butts, C. K. Winn, A. McK. Jones and H. L. Smith and Acting Asst.-Surgeons R. I. Longabaugh, W. G. Steadman, H. L. Dollard, E. P. Huff, M. C. Baker, F. D. Chappelear and E. E. Curtis to Naval Medical School, Washington.

Norton, O. D., surgeon, detached from *Yankee* and to *Missouri*.

R. M. Kennedy, surgeon, detached from *Missouri*, and to Bureau of Medicine and Surgery.

Wm. Seaman, P. A. surgeon, detached from Boston yard and to *Prairie*.

Murphy, J. F., P. A. surgeon, from Omaha Recruiting Office to *Georgia*.

W. H. Bell, surgeon, and Asst.-Surgeon J. P. DeBruler, report to Surgeon General, special duty.

C. C. Grieve, asst.-surgeon, to Omaha Navy Recruiting Office.

Dean, F. W. S., asst.-surgeon, to New York Navy Yard.

Dykes, J. R., asst.-surgeon, from New York Navy Yard to New Orleans Naval Station.

Block, W. H., acting asst.-surgeon, from New Orleans Naval Station to Navy Recruiting Party No. 4.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending September 19, 1906:

Stoner, G. W., surgeon, granted four days' leave of absence from September 8, under the provisions of Paragraph 189 of the Regulations.

Clark, Taliaferro, P. A. surgeon, granted leave of absence for two months from September 15.

Billings, W. C., P. A. surgeon, relieved from duty on the U. S. S. *Rush*, and directed to proceed to Vancouver, B. C., for duty in connection with the examination of aliens.

Korn, W. A., P. A. surgeon, relieved from duty at Perth Amboy, N. J., and directed to proceed to Reedy Island Quarantine Station and assume command of the service at that port.

Holt, J. M., P. A. surgeon, relieved from duty at San Francisco and directed to proceed to Columbia River Quarantine Station, Astoria, Ore., assuming command of the service at that port.

Glover, M. W., P. A. surgeon, relieved from duty at Vancouver, B. C., and directed to proceed to Sitka, Alaska, for duty on the U. S. S. *Rush*, relieving P. A. Surgeon W. C. Billings.

McCoy, G. W., P. A. surgeon, granted leave of absence for two months from October 4.

Smith, F. C., asst.-surgeon, relieved from duty at Detroit, and directed to proceed to Perth Amboy Quarantine Station, N. J., and assume command of the service at that port.

Ashford, F. A., asst.-surgeon, directed to proceed from Ellis Island, N. Y., to Philadelphia, for temporary duty.

McKeon, F. H., asst.-surgeon, relieved from temporary duty at Columbia River Quarantine Station and directed to proceed to San Francisco for duty and assignment to quarters.

Miller, W. W., asst.-surgeon, directed to proceed to Ellis Island, N. Y., reporting to the Medical Officer in command for duty.

allenberg, R. A. C., asst.-surgeon, directed to report to the
dical officer in command at Detroit, for duty and assignment to
Barters.
dBean, L. C., acting asst.-surgeon, granted leave of absence fo
ght days from September 11.

Nute, A. J., acting asst.-surgeon, granted leave of absence for seventeen days from September 25.

Allen, G. C., pharmacist, granted leave of absence for two months, from September 28, 1906, without pay.

Van Ness, G. I., Jr., pharmacist, directed to report to Surgeon P. M. Carrington, chairman of board of examiners, to determine his fitness for promotion to the grade of pharmacist of the second class.

BOARD CONVENED.

A board was convened to meet at Fort Stanton, N. M., on the call of the chairman, for the examination of Pharmacist G. I. Van Ness, Jr., to determine his fitness for promotion to the grade of pharmacist of the second class. Detail for the Board: Surgeon P. M. Carrington, chairman; P. A. surgeon L. D. Fricks, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Sept. 21, 1906:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, Sept. 1-8, 4 cases, 1 death.

Massachusetts: Lawrence, Sept. 1-8, 1 case.

Montana: State, July 1-31, 90 cases.

New York: New York, Aug. 25-Sept. 15, 7 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, July 28-Aug. 4, 24 cases.

Brazil: Rio de Janeiro, July 29-Aug. 12, 4 cases.

Chile: Antofagasta, Aug. 12-19, 47 cases, 9 deaths; Coquimbo, July 14-27, 12 cases, 3 deaths.

India: Bombay, Aug. 7-14, 2 deaths; Calcutta, July 28-Aug. 4, 3 deaths; Karachi, Aug. 5-12, 2 cases, 1 death; Madras, Aug. 4-10, 2 cases, 2 deaths; Rangoon, July 28-Aug. 4, 1 case, 1 death.

Italy, General: Aug. 17-23, 6 cases.

Russia: Odessa, Aug. 19-25, 5 cases, 1 death.

Siberia: Vladivostok, July 21-28, 3 cases, 1 death.

Spain: Barcelona, Aug. 21-31, 8 deaths.

Turkey: Constantinople, Aug. 20-27, 1 death.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, July 29-Aug. 5, 1 case, 1 death.

Cuba: Habana, Sept. 5-18, 2 cases.

Honduras: Ceiba, Aug. 5-Sept. 1, present.

Mexico: Merida, Aug. 25-Sept. 8, 4 cases, 3 deaths; Tuxtepec, Aug. 26-Sept. 10, 10 cases, 6 deaths; Vera Cruz, Sept. 3, 1 case, imported.

CHOLERA—FOREIGN.

India: Bombay, Aug. 7-14, 77 deaths; Calcutta, July 28-Aug. 4, 6 deaths; Madras, Aug. 4-10, 5 deaths.

PLAGUE.

Brazil: Rio de Janeiro, July 29-Aug. 12, 5 cases, 2 deaths.

Egypt: Alexandria, Aug. 17-23, 10 cases, 3 deaths; Suez, Aug. 18-23, 3 cases, 2 deaths.

India: Bombay, Aug. 7-14, 33 deaths; Calcutta, July 28-Aug. 4, 17 deaths; Karachi, Aug. 5-12, 6 cases, 6 deaths; Rangoon, July 28-Aug. 4, 136 deaths.

Mauritius: July 6-13, 1 case, 1 death.

Turkey: Trebizond, Aug. 8-13, 8 cases, 3 deaths.

Medical Organization

CONCLUSIONS FROM A COMPARATIVE STUDY OF THE STATUS OF THE MEDICAL PROFESSION IN GREAT BRITAIN AND THE UNITED STATES.

J. N. McCormack, M.D.

Chairman of the Committee on Organization of the American Medical Association.

BOWLING GREEN, KY.

A good part of my vacation has been spent in the small towns and country districts of England, Ireland and Scotland, and I have been interested in such a study of professional conditions there as would enable me to institute practical comparisons between them and those existing in our own country. I made few inquiries into these matters in the large centers of population in Great Britain, because they are already so well understood, and on the Continent, both because my time was mainly spent in the large cities or resorts and because of a lack of familiarity with the language of the respective countries.

To begin with, my former impressions were confirmed that our physicians and surgeons of the first rank will bear more than favorable comparison with those of any other land. Especially in everyday practical work, as distinguished from the research work of the laboratory, our men have a power of individual initiative, of resource, dash—to use that term in its best sense—both in medicine and surgery, not excelled in any other part of the world.

On the other hand, I got the impression, even more distinctly, that, as the result of high standards of requirements, so long established as to be fixed policies of both the profession and of government, the rank and file of medical men in Europe have had such advantages in both preliminary and professional education that there is an entire absence of the illiterate, hopeless element which forms such a large substratum in almost every community with us, and which, in spite of the rapid advance in requirements in the last few years, must continue as a perplexity and reproach to the organized profession, and a danger to the people dependent on them, until removed by time and the hand of a kind providence. Here, probably about in equal proportion as among the highly educated classes with us, a physician may be a failure for lack of practical knowledge, of the common sense essential to real success in any vocation, but, at least, he is not an ignorant loon, who does violence to his mother tongue every time he opens his mouth or writes a prescription. His preliminary and technical education have not only been such as to develop all that was possible in him, but to give him a respect for his profession, and to command a respect for it in his community, in striking contrast with what is common with a varying but considerable percentage of the profession in many sections of our own country who never should have been considered for admission to its ranks.

Because it deserves it, for the reasons stated, the profession as a whole occupies a very much higher place in the public estimation than with us. The evidence of this is seen on every hand. Health and medical legislation are far more advanced than with us, and the laws are more easily enforced, because of the solid and intelligent support of the courts and other official classes, as well as the habit of respect and obedience which these conditions naturally have engendered. Contrary to a general impression, quackery, in the forms so flagrant and offensive with us, is practically unknown here. There is some quackery, it is true, some "patent-medicine" advertising, but, as compared with what we have in most states, it is so quiet and subdued as to be almost respectable. It has no hold on their highly educated clergy, little influence with the press, and none, so far as I was able to gather, over the officials corresponding to our governors, congressmen and senators. In the same way, and for the same reasons, Christian science and other similar fads and fancies, which have taken such a hold on the educated and wealthy classes in many sections of our country as to cripple the profession greatly in its efforts to secure and enforce legislation necessary for the protection of the most vital interests of the people, and to rob it of the cream of the support to which it is so justly entitled, are subjected to authoritative scientific tests, if considered worthy of notice at all, in which the profession has a trusted voice and influence. This is illustrated in the case of Keeley, who has found it impossible to secure the support of the educated classes, which here, in contrast with our side again, always includes the official classes. I have verified this information by constant examinations of the advertising columns of the newspapers and magazines. No form of quackery can for long rob any people without the aid of its press and clergy, and our profession can not too soon be awakened to the importance of bending every energy in enlisting these agencies in the support of honest scientific medicine.

Although the cost of living is much less here, the profession is better supported than with us. In my judgment, this is because the profession deserves it. The fees are certainly better on an average, than in the older sections of our country, and the collections, in which most of our physicians are especially weak and unsystematic, are far better. This is partly because the profession has been longer and better organized, and both it and the people better trained in such matters, and probably still more because the line is sharply defined as to charity practice. The employment of medical men on fairly remunerative salaries to attend the poor is an established system, and those unable to pay for services go to the hospitals or on the rates, except of course, the worthy classes, God's poor, who find the doctor their best friend in every land. Special training is required of health officials, in addition to the ordinary medical course, but once a competent man has passed the examination and been appointed to public position, the tenure is more certain and is free from political control.

It is almost a universal custom here for physicians to dispense their own drugs, especially in the towns and country districts. Nearly all offices are in the residences and usually there is an assistant to aid in dispensing and in dressings, often some member of the family who has been given special training for such duties. This, and the usual limitation of his practice to a small area, make the life of a medical man far easier than with us, and, being near his family and library, his opportunities for social and literary enjoyment are far greater. As a result of these advantages and of his high preliminary training, nearly every one of them was found more or less enthusastic in some special scientific or literary study outside of his profession. One was a botanist, another an ethnologist or archaeologist or linguist, and the effect on the individual, on the profession as a whole, and on the community could not but be for the best.

The pleasant thought in connection with this whole matter was that it has required the continuous efforts of generations of devoted medical men, often under difficulties as great as any which can ever confront us, to bring about the present comparatively favorable, but far from ideal, conditions. They have never had any advancement in the same length of time to compare with what ours has been within the last quarter of a century. In the light of their experience and our own, we only need to maintain and to foster such wise and conservative policies for another generation as will constantly command the confidence and coördinate the efforts of every honest and worthy interest of the profession to enable us to contend generously for supremacy and to take the lead in scientific medicine, as our people hope to do in all our other relations.

Society Proceedings

COMING MEETINGS.

Medical Association of District of Columbia, Washington, Oct. 2.
Idaho State Medical Society, Lewiston, Oct. 4-5.
Colorado State Medical Society, Denver, Oct. 9-11.
Delaware State Medical Society, Wilmington, Oct. 9.
Medical Society of Virginia, Charlottesville, Oct. 9-11.
Kentucky State Medical Association, Owensboro, Oct. 10-12.
Vermont State Medical Society, Barre, Oct. 11-12.
American Association of Railway Surgeons, Chicago, Oct. 17-19.
Mississippi Valley Medical Association, Hot Springs, Ark., Nov. 7-8.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Nineteenth Annual Meeting, held at Cincinnati, Sept. 20-22, 1906.

Under the presidency of Dr. John Young Brown, St. Louis.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. Robert T. Morris, New York City; vice-presidents, Drs. George W. Crile, Cleveland, Ohio, and Charles L. Bonifield, Cincinnati; secretary, Dr. William Warren Potter, Buffalo, N. Y. (re-elected); treasurer, Dr. X. O. Werder, Pittsburg, Pa. (re-elected).

The time and place of next meeting were left to the executive council.

After the transaction of routine business the reading of papers was begun.

Kidney and Colon Suspension by the Use of the Nephrocolic Ligament and Gerota's Capsule.

Dr. Howard W. Longyear, Detroit, said the ligament is described as formed by an aggregation of fine fasciculi originating in and being identical with the fibrous tissue forming the framework of the fatty capsule of the kidney, which, after enveloping the kidney in a fine network, passes downward and are inserted into the posterior wall of the ascending colon on the right side, and the descending colon on the left side. Its structure, as well as its action, may be compared to that of the network covering a balloon, the cords of which descend downward and support the car. The kidney is the balloon and the cecum the car; the kidney descends or not, according to the laxity of its supports and the degree of traction exerted on it by the cecum. Dr. Longyear claimed that the traction thus exerted on the kidney by the bowel is the prime factor in the causation of nephroptosis, and as the duodenum is also displaced by reason of its adherence to the fatty capsule, the first object of attainment in any operative procedure should be the suspension of the bowel. To do this he isloates the nephrocolic ligament through the usual incision (though shorter) in the loin and suspends the bowel by overlapping and sewing flaps made from Gerota's capsule through the loop of the ligament. This also holds the kidney in suspension, but this object he considered second in importance to the suspension of the bowel.

Fixation of the Kidney by Shortening of the Nephrocolic Ligament.

Dr. Charles A. L. Reed, Cincinnati, presented a brief clinical report of cases operated on by the application of the principle, but a modification of the technic, as presented by Dr. Longyear at the meeting last year. The essential modification of the technic consists of the control of the nephrocolic ligament through an oblique incision in the intercostal interval.

The Technic of Kidney Fixation.

Dr. J. Henry Carstens, Detroit, pointed out that to fix a kidney permanently it is necessary to resect the fibrous capsule and to fix this firmly to the muscle as near to the normal position as possible. Only in this way can a kidney be firmly and permanently fixed. He described a simple operation which he said could be done in 10 minutes through a very small opening, and that it would give permanent results, and it seemed to him an ideal method of permanently fixing a kidney.

DISCUSSION ON THE KIDNEY SYMPOSIUM.

Dr. Herman E. Hayd, Buffalo, described various methods he had resorted to for fixing a kidney. He said it is not possible to fix a kidney unless one delivers it so as to produce a certain amount of adhesive union between the kidney and the loose structures which it has occupied so long.

Dr. Earl Harlan, Cincinnati, said that to understand the subject of dislocated kidney thoroughly one should be familiar with the normal anatomic relations of the surrounding organs, the nerve supply and circulation of the parts, and have a correct knowledge of the attachments and relations of the peritoneum. He called attention to the very wide range of pathologic anatomy attendant on kidney dislocations, and showed that any operative procedures, which have for their intention the correction of the numerous symptoms connected with this trouble, must be based on a correct rearrangement of the normal anatomy of the parts in the right upper quadrant. He described at length an operative technic which he had found satisfactory, inasmuch as it was based on the normal anatomy of this region.

These papers were further discussed by Drs. James F. Baldwin, Columbus, Ohio; John B. Murphy, Chicago, and Joseph Price, Philadelphia, all of whom described methods of anchoring loose kidneys.

(*To be continued.*)

WASHINGTON STATE MEDICAL ASSOCIATION.

Seventeenth Annual Meeting, held in Spokane, Sept. 11-13, 1906.

Under the presidency of Dr. George W. Libby, Spokane.

Better Care of the Insane Needed.

In the address of welcome Governor Mead stated that the insane hospitals of the state have been carried on on a purely utilitarian basis, and that he believes that no expense should be spared for suitable salaries for those who take care of the insane, as the state should have the benefit of the best medical service that can be furnished. He also said that the state can do a great deal more good than has been done in the prevention of tuberculosis.

In his annual address the president, Dr. George W. Libby, characterized the system of caring for the insane as inadequate, crude and even suggesting barbarism, and said that the laws by which the unfortunates are committed to the care of the state are not characteristic of the twentieth century civilization, but are relics of the dark ages. In his opinion, to determine whether an individual should be committed to an insane asylum, the investigation should be conducted by a commission composed of at least three physicians, one of whom should be an alienist and should visit the patient in his home. He also favored the establishment of a separate institution for the criminal insane.

To Prevent Blindness of Infants.

The association adopted resolutions favoring the passing of a law providing that any nurse who shall notice any inflammation of the eyes of an infant up to the time the child is two weeks old shall report the case to a competent physician, the penalty for failure to make such report being a fine of not more than $100 or imprisonment for six months, or both.

Supervision of Sanitary Works and Water Supplies.

The sanitary engineer of the State Board of Health also proposed a law, making it prohibitory for any municipalities, corporations or public institutions or persons to introduce a new system of water supply or sewerage in the state of Washington unless the plan for such proposed water supply or outlet for such proposed sewerage system shall have been examined and approved by the Washington State Board of Health.

The association favored the adoption of a uniform standard of medical examinations.

A resolution was passed asking that the state legislature fix the fee of physicians for examining persons charged with insanity at $10.

Election of Officers.

The following officers were elected: Dr. James H. Lyons, Seattle, president; Drs. Edwin L. Kimball, Spokane, and Ellsworth E. Shaw, Walla Walla, vice-presidents; Dr. Curtis H. Thomson, Seattle, secretary; Dr. George H. McGreer, Tacoma, treasurer, and Drs. Frank A. Scott of Pierce County, Hiram M. Read, King County, F. H. Luce, Lincoln County, James R. Yocom, Tacoma County, Robert L. Thompson, Spokane County, Henry W. Dewey, Pierce County, George W. Overmeyer, Pacific County, Lemon R. Markley, Whatcom County, Wilson Johnston, Whitman County, and C. N. Suttner, Walla Walla County, members of judicial council. The 1907 meeting of the association will be held in Seattle.

ST. LOUIS MEDICAL SOCIETY.

Meeting held Sept. 15, 1906.

The President, Dr. George Homan, in the Chair.

DEDICATION OF NEW MEDICAL AUDITORIUM.

The auditorium is located on a piece of ground adjoining the St. Louis Medical Library Building, Thirty-fifth and Pine streets. It is built in amphitheater form, with about 400 opera chairs and room for many more seats for special occasions. It has a handsome beamed ceiling and dependent chain chandeliers. The walls are polished brick.

Introductory Address by President.

Dr. Homan said in part: "Three score and ten years ago, lacking a few months, this society was ordained by an act of the General Assembly of Missouri, the expressed purpose of such legislation being the improvement of medical literature and science, and to give dignity, permanency and usefulness to this body. This body has never had a roof above it that could be called its own. The exercises arranged for this evening are in celebration of the fact that finally this reproach has been put away.

"That the present happy achievement was made possible may, it is believed, without invidious reflection, be traced to the wisdom of the society in 1895 in the selection of its treasurer who, on his induction into office, found claims amounting to several hundred dollars, and almost nothing in the treasury with which to meet this indebtedness. But gradually, by prudence, thrift and good management, better business methods were introduced; and, after eight years of such faithful service, when he was called to the presidency, a very comfortable bank account had been accumulated to the credit of the society, and from this nest egg has sprung the edifice in which we are now assembled. The funds thus made available for investment in this property have been supplemented by contributions secured chiefly from the membership, and while the individual response to this appeal has been liberal as a rule, all things considered, still the names of very many of our members have not as yet appeared in the list of givers to this cause, but the hope is confidently indulged that such oversights and omissions will promptly be repaired when the situation is better understood.

"There are present here to-night some who have come down from a former professional generation, and who have personal knowledge of the vicissitudes and embarrassments that beset and confronted the organized profession here in earlier years, progress being hindered perhaps by bickering or belligerency, often due to mere misunderstanding or imperfect acquaintance, and leading to occurrences that were regrettable and sometimes even injurious to the advancement of scientific work and the promotion of lasting harmony among brethren.

"Happily for us of to-day, a more pacific spirit seems now to be in the air, a disposition to cultivate peace that extends even to nations which are rivals and competitors in many fields, and if this spirit can be brought sensibly to bear in the sharp contentions of races and governments, there is small excuse for a different manifestation among those so advanced in humane civilization as the medical profession is universally conceded to be.

"As the climate of feeling and opinion generally appears to have become more moderate, this occasion presents a most fitting opportunity to express the sincere hope that no wrongful or unkind contention between members may ever be brought across the threshold of this building; that the supreme, the controlling obligation of thorough, honest, unflagging scientific work shall never be lost sight of within these walls; that the doors shall never be closed to the truth, howsoever unwelcome it may appear at the time or by whom presented; that this roof-tree shall be broad enough to afford hospitality and welcome to every honest thinker who believes that he has a new message to deliver for the betterment of his fellow-men—in short, that here is a temple dedicated to truth, science, progress; consecrated to peace, concord, unity, good will, so that the generations yet to come may be the better for our lives and labors, and gratefully say: 'They are justified in their works; they builded even better than they knew!'"

Early History of Society.

Dr. LeGrand Atwood, one of the oldest living members of the society, said, among other things, that his acquaintance with the society dates back to 1846, when he first attended its meetings. The first discussion he had heard on the floor of the society was one between Drs. Johnston, Hammond and McPheeters. These men were faithful to the requirements of the profession. He said that the first attempt at organization of this society occurred on Dec. 25, 1835, when a meeting was held in the old Masonic Hall in this city. Dr. William Carr Lane was once president of the society. Dr. Lane was elected eight times mayor of the city of St. Louis, only refusing the office again because of stress of professional labor. The speaker called attention to the greatness of Dr. Lane from a medical as well as from a civic standpoint, and said that he hoped that at some future time the physicians would succeed in having a monument erected to him in City Hall Square. At the meeting above alluded to the society was formed and organized. At a meeting on Jan. 2, 1836, the constitution was adopted. The officers for 1836 were: Dr. J. G. Farrar, president; Dr. Lane, vice-president; Dr. B. B. Brown, recording secretary, and Dr. Y. B. Bouting, treasurer. On Jan. 15, 1836, the by-laws were drafted and adopted. The first paper read before the society in regular session assembled was entitled "Does Epidemic Contagious Puerperal Fever Exist in St. Louis?"

Dr. Farrar was the first American physician in St. Louis. The other physicians were French. On Sept. 24, 1836, the St. Louis Medical Society appointed a committee to confer with the faculty of the St. Louis University, relative to the establishment of a medical school in this city. Later in the same year the society took up the matter of disciplining some members who were advertising in the daily papers. The society also took up the matter of keeping a record of births and deaths, which forms the basis of the present-day mortality records of the health department. Dr. Barnett at this time offered a resolution governing the sale of milk, which is the first attempt at pure-food legislation here. A committee took up the matter of preventing the spread of contagious diseases.

In 1850 the society adopted the Code of Ethics of the American Medical Association. In 1877 the society adopted a resolution that only medical men be appointed health commissioners of the city. In 1887 Dr. McPheeters introduced a resolution calling for the creation of a real estate and building committee, for the purpose of securing a permanent home for the society. The project was dropped on account of inability to secure money enough to buy the property.

Reports of Committees.

Dr. R. M. Funkhouser, chairman of the finance committee, reported briefly that there was a small balance of the money subscribed by the members remaining, but that several thousand dollars had been borrowed from the bank to complete the building of the auditorium. He stated that he was ready to receive new subscriptions to cover this loan.

Dr. Pinckney French, chairman of the committee on business affairs, received the keys of the building from the president and addressed the members on the need of paying off the loan spoken of by Dr. Funkhouser. Dr. French proved that his reputation as a financier was well grounded by obtaining practically all the needed money, he leading off with a generous subscription, followed by Drs. Outten and Homan and others.

Dr. A. R. Kiefer, chairman of the building committee, and Dr. John C. Morfit, chairman of the committee of arrangements, also reported.

Medical Profession of St. Louis of To-day.

Dr. W. B. Outten ascribed the difficulties in the past in the way of unification of the city's profession to the Civil War and its political effect thereafter. He said that up to 1864 the profession was powerful, influential and united in its work in St. Louis, that St. Louis was a great medical center, but that from 1864 to 1895 elements adverse to the St. Louis medical profession took deep root and hampered the work. He said that in spite of the great adversity and strife in the ranks of the profession, the St. Louis Medical College lived on. He rendered a tribute to this college for its unflinching spirit in times of adversity. For the future he predicted great things of the St. Louis Medical Society and the profession of that city.

Future of the Medical Profession of St. Louis.

Dr. W. G. Moore called attention to the altruistic work of the men who have attended regularly the meetings of the city and state societies, men who have gone by circuitous roads of travel to state meetings, neglecting their business purely for the purpose of maintaining an organization. He spoke of the great work of organization of local and county societies, which has been so well stimulated by the American Medical Association. He said that this society will become the society of the young men before him. The young men must perpetuate it.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

Fifteenth Annual Meeting, held in Buffalo, N. Y., Sept. 11-14, 1906.

(*Continued from page 956.*)

The Russian Red Cross.

Col. Valery Havard, assistant surgeon-general U.S.A., described the origin, development and history of the Russian Red Cross Society, which was founded during the Crimean War as the "Committee of the Exaltation of the Cross." In 1867 the name was changed to "Russian Society for the Assistance of Sick and Wounded Soldiers," and in 1876 the society assumed its present name. The society was organized under the laws of the empire and has active and honorary members, contributors and benefactors. The executive power is vested in a central committee, to which state and local committees report. For the work of the society during the Russo-Japanese War, Manchuria and eastern Siberia were divided into five zones, and the work undertaken included the establishment of supply depots, transportation of the sick and wounded, assistance to the medical military service, direction of the relief of the sick and wounded, and the organization of feeding stations. The author believes that such societies are invaluable and indispensable in war, and that a Red Cross society to be efficient must be not only well organized, but every member should acquire a practical knowledge of first-aid and should have had experience in the handling of patients.

Tendon Tissue versus Catgut.

Col. Nicholas Senn, surgeon-general, Ill.N.G., gave a history of ligatures and suture material. The first animal ligatures were introduced by Dr. Paul Eve, Nashville, Tenn., and Dr. Christian Linde, Oshkosh, Wis., who used for this purpose split deer tendon. Lord Lister was the first to show the way to the successful employment of antisepsis in suture and ligature material, and the principles which he taught still remain. Silk, silver wire, horsehair and silkworm gut will continue as substances for removable sutures, but can not hold their present position as material for buried sutures. The material known as catgut is not the intestine of the cat, but is made from the small intestine of the sheep, and is open to the objection that it is exceedingly difficult to sterilize and render aseptic. Tendon tissue, in the author's opinion, is preferable to catgut, because it is made of straight fibers running parallel with each other; and because it is obtained from the cleanest part of the animal. It is stronger than catgut, which is made up largely of muscular tissue. It does not loosen as does catgut under the influence of moisture, and tendon material can be made aseptic by the same methods as catgut. In 1878 Ischiguro, surgeon general of Japan, made a report on whale tendon, which he advocated for suture material. The so-called kangaroo tendon, which had a great vogue, is not made from the tendon of the kangaroo, but from a smaller animal of the same family, the wallaby. The author advocated the use of the tendons of the arctic sea animals, the narwhal, walrus, whale, etc. The tendons on either side of the spine are used for this purpose, and in the case of the narwhal they can be split into fine threads, four feet or more in length. The walrus tendon is coarser, but possesses similar advantages, and the same applies to the tendon from the back of the whale. Dr. Senn has used this coarser tendon with success in operations for the radical cure of hernia and recommends its use for suture and ligature material on account of the abundance of the supply and the inexpensiveness when once on the market. He stated that he obtained in the arctic region last summer a supply of tendon material sufficient for the use of a large hospital for an entire year, in exchange for a pound or two of powder.

Identification by Finger Prints.

Surgeon Charles P. Wertenbaker, U.S.P.H.&M.-H.S., called attention to the fact that no two persons have identical finger prints, and spoke of the interest in the development of the identification of individuals by this means. The method consists in taking an impression of the lines or markings on the thumb or one or more of the fingers. The thumb is pressed lightly on an ordinary rubber stamp pad and then pressed firmly on the surface which is intended to receive the impression. The value of the system results in the fact that the lines of the fingers of no two persons are alike and that the lines of the fingers of an individual are unchanged from the date of his birth until the time of his death. The markings of the right and left hands are practically the same, except that the lines run in opposite directions. The marks of all fingers also are practically the same. Identification by the use of finger prints has been in use in China for several centuries. In India the British government adopted identification by finger prints in lieu of signatures in legal documents, receipts, etc., many years ago, because of the difficulty in securing the names of individuals which, under the peculiar conditions existing there, frequently changed. Last summer while on duty during the yellow-fever epidemic in the South Dr. Wertenbaker employed this method to prevent the transferring of certificates of persons traveling in certain portions of the South, to show that they had not been exposed to the infection of yellow fever. This practice, which was general, he completely stopped by adopting the following method of identification: A description of the individual, giving his nationality, age, height, color of hair and eyes and special marks; the signature and the impression of the ball of the right thumb. Finger marks may be classified as open loops, closed loops, "S" loops, whorls, and varieties combining the previously named classes. The United States Army has recently ordered that the thumb and finger-print system of identification be introduced in the recruitments for the Army, supplanting the outline figure card, and the finger prints, together with the photograph, now form a part of the descriptive card of each recruit. Dr. Wertenbaker considers this method less complicated and more sure than the Bertillon method of examination.

Splenic Abscess Following Malaria.

Surgeon William H. Bell, U.S.N., read a paper based on three cases of splenic abscess, following as a complication to grave malarial infection. He discussed the pathogenesis of the condition and emphasized malaria as a disease important in the etiology of splenic abscess, demonstrating theoretically why the conditions should be of frequent occurrence. He suggested a procedure for direct experiment to determine the tenability of the theoretical premises, and concluded with a review of the symptoms and signs of the disease, and remarks on prognosis and treatment.

(To be continued.)

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25 1906.

(Continued from page 959.)

SECTION OF ANATOMY.

Arthur Robinson, M.D., Birmingham, the president, in his introductory remarks on "The Teaching of Anatomy in Universities and Public Schools," gave a sketch of the history of the teaching of anatomy. Men of an inquisitive turn of mind first studied it, so that they might know as much as possible about themselves and their fellows. They probably hoped that a knowledge of the structure and arrangements of the various parts of the body would be of service in the attempt to meet and avoid those infirmities and diseases which they knew to be the precursors and the possible causes of death. The knowledge thus acquired was utilized by those who undertook the treatment of injuries and diseases of the human body, and gradually the study of the details of human anatomy passed into the hands of priests, who provided for the bodies as well as for the souls of their flocks, and later into the hands of the members of the medical profession.

There is still a tendency in some quarters to decry the wider knowledge of anatomy as a science and to insist that the medical student shall be taught only the technical details of the human anatomy, that is, the position of organs and parts and their relationships to each other. Nothing could be more harmful to the best interests of the medical profession and the public than the adoption of such a view. It would result in the medical man becoming a mere mechanic, who can do well what he has been taught to do or has seen done, but who is absolutely useless when he desires to do something that requires general as well as special knowledge. Fortunately there are many broad-minded men in the profession who have recognized that the man who has a wide knowledge of general principles is better adapted to meet unexpected circumstances than the one who is provided merely with a memory of certain observed facts. Consequently, the teaching of anatomy in a large number of institutions has passed into the hands of men who are enthusiasts in its teaching and study, and have spent the greater portion of their lives in the study of the subject. This should be still more the case in the future. This forward movement is attended by the danger that specialists occasionally lose sight of the practical application of their work and teach only its more interesting features from a scientific viewpoint. This danger will be avoided if the electing bodies of teaching institutions employ as teachers only men who have been through the medical curriculum and understand the needs of the profession.

Teachers of anatomy should also habitually take part in the meetings of medical associations, and thus keep in touch with the general knowledge of the profession and its relationship to their special branch. The object of the nts that beset riculum is to give the student a wide knowledge earlier years, ciples on which he must rely in the practice of his belligerency, a sufficient knowledge of the details to prevent the acquaintance, any serious mistake, and a sufficiency of general knownd some- enable him to take his place as an accepted membefic work medical community. It should, therefore, be the object anatomist to avoid engaging the student in a superfluity now details. He should insist on a sound knowledge of the generends relationship of the most important parts of the body, and a good knowledge of the general principles which underly these relationships and the advantages derived from them. He should make his students acquainted with the general laws of growth and development and abnormal conditions produced by deviations from these laws. He should draw attention to the relation of man to other animals in all cases where such relations are evident. In addition, he should see that his students acquire a sufficient knowledge of the details of the various parts of the body and their relationship to enable them to cope successfully with any emergency of daily life, but he should impress on his students that it is more important that they know the various principles on which the various systems or organs are constructed and those on which they are modified, than that they should memorize the details, which may be found at any time in the numerous text-books.

SECTION OF PHYSIOLOGY.

Proteid Nomenclature.

Prof. W. D. Halliburton, M.D., F.R.C.S., the president, in his introductory remarks considered the question of proteid nomenclature. The recommendations of the Chemical Society of London, several years ago, have never been universally adopted by those who write or speak English. This committee suggested the termination of *ol* for alcohols, *ine* for basic substances, and *in* for materials of more indefinite structure. In America, where some support should have been anticipated, the non-conforming conscience has asserted itself with the resultant tendency toward Germanizing rather than Anglicizing chemical names. Thus creatine is spelled kreatin; sulphur, sulfur, and the final e in chlorides, sulphates and other salts is usually absent. He then took up the change in the chemical conception of the proteids and the selection of a general name for the entire group of albuminous compounds. The term "proteid," used in England, is restricted to a sub-group (the conjugated proteids) by the Germans; the word "albuminoid," employed by analytical chemists in England and by French physiologists in the same sense, is restricted to the heterogeneous group of which gelatin and keratin are instances, by German and English physiologists. The word "albumin" is very generally bestowed on a sub-group, and its adoption as a family name would make worse the present confusion. After much deliberation "protein" was recommended as a general name, and the following sub-classes were suggested:

1. Protamines.
2. Histones.
3. Albumins.
4. Globulins.
5. Sclero-proteins.
6. Phospho-proteins.
7. Conjugated Proteins.
    (a) Gluco-proteins (for example, mucin.)
    (b) Nucleo-proteins.
    (c) Chromo-proteins (for example, hemoglobin.)

For classes 3 and 4 no general term has been found which will prove acceptable, "heat-coagulable proteins" and "albugin" were suggested, but universally disapproved. The committee also recommended that the products of protein hydrolysis be classified as follows:

1. Infra-proteins, to replace albuminates, the termination of which implies a salt and so is objectionable.
2. Proteoses, which include albumose, globulose, gelatose, etc.
3. Peptones. It was proposed that this should be restricted to those further products of hydrolysis, which cannot be salted out from solution, but which nevertheless, still give the biuret reaction.
4. Polypeptides. These substances are still lower down, not as a rule, giving the biuret reaction, but their exact relations to peptones is still undetermined.

Transplantation of Blood Vessels and Organs.

Dr. Alexis Carrel explained his experiments in the transplantation of blood vessels and organs in animals, and pre-

tion calling for
mittee, for the p
society. The pro
secure money enou

Dr. R. M. Funkho
reported briefly that t
subscribed by the mem
sand dollars had been
the building of the aud
to receive new subscrip

Dr. Pinckney Frenc
ness affairs, received the
dent and addressed the me
loan spoken of by Dr. Fun
reputation as a financier
ically all the needed money,
cription, followed by Drs.

Dr. W. P. B
County Medical Soc chairman of the buil
tance of organization, airman of the comm
maintain their position in
the disposition of the members of
in their work.

uis of To-day.

Address of President.

in the past

Dr. William H. Hartzell, Allentown, stated that when the society last met at Bedford Springs, 19 years ago, the membership was 800, whereas now it is over 4,500, which increase he attributed to the increased feeling of unity among the profession. He urged the necessity for further enlightenment of the public in hygiene and sanitation, because thereby the mortality from many diseases, such as typhoid and tuberculosis, will be decreased. He pointed out the necessity for the correction of the dispensary abuse, and condemned contract practice for lodges, etc. He also reviewed the advances made in the various domains of medicine, particularly in surgery and laboratory diagnosis.

Treatment of Inebriates and Dipsomaniacs.

Dr. Theodore Diller, Pittsburg, commented on the Act of Assembly of April 9, 1903, providing for the commitment and detention of inebriates and drug habitués, and stated that in order to make the act effective there is needed a hospital or asylum for commitment. He described in detail various state hospitals, particularly those in Iowa and Massachusetts. He believes that the lack of such a hospital is the means of causing many inebriates, etc., to become inmates of quack institutions.

DISCUSSION.

Dr. John B. Carrell, Hatboro, stated that he had communicated with various authorities on this subject, and the consensus of opinion seemed to be that a separate institution is necessary. The opinion as to permanent cures varies widely, ranging from 1 or 2 to 75 or 80 per cent., and that the most common etiologic factor is an unstable nervous system produced through heredity and wrong notions of sociability.

Dr. Lowell M. Gates, Scranton, believed that a comparatively short time, a few weeks or months, is necessary to cure these cases, provided they would not afterward be subjected to temptation. The best results would be obtained by the enactment of prohibitory laws in this direction.

Dr. Charles K. Mills, Philadelphia, stated that a separate institution should be established, and that the predisposing cause to inebriety is the hereditary condition of the inebriate and his family.

Dr. Charles W. Burr, Philadelphia, recited the provisions and practice under the Pennsylvania law for the commitment of the inebriate, referring particularly to the fact that no provision is made for those who can not afford to pay. He does not feel, however, that separate institutions are absolutely necessary, but that the inebriate can be treated successfully in the insane hospitals under proper regulations. Only a few of the cases can be cured, some being of such a character that a radical cure is not possible.

every member should acquire a practical knowledge of first-aid and should have had experience in the handling of patients.

Tendon Tissue versus Catgut.

Col. Nicholas Senn, surgeon-general, Ill.N.G., gave a history of ligatures and suture material. The first animal ligatures were introduced by Dr. Paul Eve, Nashville, Tenn., and Dr. Christian Linde, Oshkosh, Wis., who used for this purpose split deer tendon. Lord Lister was the first to show the way to the successful employment of antisepsis in suture and ligature material, and the principles which he taught still remain. Silk, silver wire, horsehair and silkworm gut will continue as substances for removable sutures, but can not hold their present position as material for buried sutures. The material known as catgut is not the intestine of the cat, but is made from the small intestine of the sheep, and is open to the ob-
jection that it is exceedingly difficult to sterilize and rer .es in
aseptic. Tendon tissue, in the author's opinion, is pre higher
to catgut, because it is made of straight fibers runnir .ent of asep-
with each other; and because it is obtained fr ..ne places; the lat-
part of the animal. It is stronger than ca .n to the necessity of
up largely of muscular tissue. It removal.
does catgut under the influence of
terial can be made aseptic .y of the Nervous System.
In 1878 Ischiguro, surge EISENBURG, Philadelphia, urged the ne-
whale tendon. .y surgeon knowing more of the anatomy of the
so-rvous system, and stated that exploratory operation for the relief of intracranial pressure, headache, etc., is justified as a palliative measure, even if radical removal of the causative factor is not possible.

SYMPOSIUM: SURGERY OF THE HEAD AND SPINE.

Cranial Injuries.

Dr. Daniel A. Webb, Scranton, considered late cerebellar abscesses of traumatic origin, and after referring to the literature of the subject, particularly the diagnosis and the relation of trauma to the abscess, stated that the only treatment for the condition is operative. He reported the case of a miner, 29 years of age, who six years previously had suffered a cranial injury by a fall of coal. When admitted to the hospital he was suffering from headache and difficulty in articulation. The case was diagnosed as one of cerebellar tumor, but after death it was discovered to be a deep-seated abscess of the middle lobe.

Fracture of Base of Skull Resulting from Direct Violence Through Inferior Maxilla.

Dr. Alexander G. Fell, Wilkes-Barre, cited the case of a man, aged 25, who during a fire fell from a porch, a distance of 20 feet, striking on the point of the inferior maxilla, causing a complete, compound, comminuted fracture between the median line and the left mental foramen.

Present Status of Cranial Surgery.

Dr. Charles H. Frazier, Philadelphia, reviewed the general progress made during the past decade, and considered particularly the surgery of epilepsy; of hemorrhage of the newborn and in childhood; of the cranial nerves; of tumors, and urged that if operation was to be done at all, it should be performed early.

Unusual Case of Trauma of Head, Exhibiting Symptoms of Astereognosis.

Drs. John H. W. Rhein and Edward Martin, Philadelphia, reported this case, which followed an attack of acute otitis media. After cleaning out the cavity and washing it with pure carbolic acid (which was afterward neutralized with alcohol), the man made a good recovery.

Impaired Cerebral Development Due to Other Than Cranial Causes.

Dr. Ernest Laplace, Philadelphia, mentioned adenoids, tongue-tie and phimosis, which conditions, he said, should be corrected as promptly as possible where no brain lesion is found. Eighty-two cases which have come under his care resulted very satisfactorily.

DISCUSSION.

Dr. Charles K. Mills, Philadelphia, stated that headache is a more valuable diagnostic symptom in brain abscess than in
closed loops.ation for brain tumor should be performed so
previously e are sufficient symptoms to diagnose the case.
cently orde .les W. Burr, Philadelphia, urged the importance of
tification. iagnosis and more prompt surgical interference in
planting brain tumor.
gether William G. Spiller, Philadelphia, urged the importance
tive .fferentiation as to location of the lesion, whether cortical
met subcortical. He also recommended the removal of a portion
m the bone in cases of enlargement of the bones of the skull, and reported two cases, one a syphilitic tumor and the other a tumor following an injury in which each patient made a good recovery.

Dr. Levi J. Hammond, Philadelphia, felt that those cases with a history of suppurating middle ear, loss of flesh, lowering of pulse and disturbance between relation of pulse and temperature strongly suggest cerebellar tumors.

Dr. William L. Rodman, Philadelphia, reported the case of a man suffering from constant vomiting, which had been diagnosed by the local physicians as a diseased condition of the stomach, but which after death proved to be an extensive tumor of the right half of the cerebellum. He believes that in most cases the peripheral operation is to be preferred to the more general one.

Dr. George W. Guthrie, Wilkes-Barre, stated that he had almost invariably secured good results in the treatment of traumatic injuries of the brain, while the contrary had been almost as uniformly the case in traumatic injuries of the spinal cord.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES.

Chairman's Address.

Dr. Samuel D. Risley, Philadelphia, said that the society had taken an important step toward the fulfillment of its ideals, for the advancement of scientific medicine, by providing for the classification and division of its work by creating sections. Formerly only such subjects as are of general interest were presented. When special subjects were introduced it had the effect of driving out of the room those of the auditors not interested in the particular organ under consideration. Therefore, members working in special fields would seek other avenues than the state society for the presentation of their results. Dr. Risley advocated that a change should be made in the rule that compels the sole publication of papers in the journal of the society, as he thought that it prevents the presentation before that body of fresh or original work, the publication of which might be deferred for an entire year. He also made a plea for physicians not to become exclusively interested in their specialties, but to keep up with the advances in general medicine and surgery; and also not to be ignorant or indifferent to the specific affections of other organs than the one selected for the special field of endeavor. The general practitioner also can not afford to ignore the increase of knowledge to be gained by attendance on the work of the section on specialties.

Local Infection from the Conjunctiva and the Lachrymal Passages.

Dr. Edward A. Shumway, Philadelphia, said that infection after operation is now known to depend on the presence of micro-organisms within the conjunctival sac. The bacteria that are normally present there are greatly increased in number by inflammation of the conjunctiva and the lachrymal passages. Infections of the eyeball fall into two classes: those that involve the cornea in the form of ulcers, and those that involve the entire ball. Ulcers of the cornea are produced by a great variety of organisms. Infection, in the majority of cases, presupposes an injury to the corneal epithelium. Infection of the globe may result from the perforation of ulcers, or may follow penetrating injuries or operation during which the eyeball is opened. It is probably not possible for bacteria to pass upward from the nasal chambers through the lachrymal passages to the eye; but, in the presence of a stricture of the duct, the sac forms an excellent breeding ground for the organisms, and these readily overflow on the conjunctiva. The treatment of even minor injuries is, therefore, of considerable importance. Dr. Shumway described the treatment fully.

(To be continued.)

Travel Notes

DISEASE AND HOSPITALS OF THE INTERIOR OF SOUTH AFRICA.

NICHOLAS SENN, M.D.
Professor of Surgery in the University of Chicago and Professor and Head of the Surgical Department of Rush Medical College.
CHICAGO.

(*Continued from page 962.*)

SANITATION IN JOHANNESBURG—DISEASES OF CENTRAL SOUTH AFRICA.

The great diamond mines of Kimberley and the richest gold mines in the world at Johannesburg are only fifteen hours apart by rail. Nature has deposited here within this limited space her richest treasures in the very heart of what was but a few years ago the Dark Continent. These mining cities are situated on the highest elevation of the interior plateau of South Africa, and the diseases prevailing here are representative of the diseases of that part of Africa. Thanks to Dr. Charles Porter, the health officer of Johannesburg. I was given every facility to get a good insight into this subject, besides familiarizing myself with sanitary matters in the city of Johannesburg. The city has about 210,000 inhabitants, 80,000 whites, the same number of negroes, and 50,000 Chinese. Dr. Porter is the busiest man in the city. He has made sanitation his specialty since his graduation in medicine. For several years he was health officer of an important city in England, and came here to take the position at a salary of $10,000 per year, and with the understanding that his work should not be hampered by politics. He is the most enthusiastic and energetic health officer I have ever met. He works without a let-up from morning until night. I spent a whole forenoon with him in visiting his various establishments, destructor, sewage compound, lazaretto and isolation hospital, scattered over a considerable part of the outskirts of the city, and I became deeply impressed with his knowledge of sanitation and the efficiency of his work. A large disinfection plant with the most improved sterilizers is in operation in connection with the lazaretto. The destructor, where all garbage is cremated, was of special interest to me. Part of the ashes from the destructor entered into the composition of an artificial stone used for paving sidewalks and sewer pipes, both of which are manufactured on the premises, and are a source of considerable income to the city. The sewage is collected in carts by a small army of blacks who live in a compound adjacent to the disinfecting station. From a common point, the sewage is conveyed to a safe distance from the city and tipped into abandoned mines or other available places. Dr. Porter's next great project will be the building of a model abattoir, for which he has already selected the site and material and drawn the plans. He is paid a large salary, but it is well invested for the improvement and health of the city.

In his annual report for the year 1903, an admirable publication, he has this to say of the causes and prevalence of pneumonia: "It is, however, generally agreed that pneumonia is an infectious disease and that it is predisposed to by devitalizing influences of any kind, such as irregularities and excesses of life, insanitary environment, overcrowding and air pollution, as well as by inferior and insufficient food, and neglect of precaution against the sudden changes of temperature characteristic of the South African climate. Furthermore, there can be little doubt that the very great amount of dust with which Johannesburg is liable to be afflicted in the dry season, has had a very considerable share in the production of the disease, and this view is confirmed by the fact that dust taken in May in Market Street and Fox Street has been shown to be as sharp, angular and irritating as that taken from the mine slopes. Finally, as the 'spit' of pneumonia patients swarms with the germs of the disease, there is little doubt that the disgusting habit of spitting, especially inside dwellings, bars and public vehicles, is an appreciable factor in spreading the disease." In the mortality statistics for that year, diarrhea and dysentery are credited with 157 deaths, including 108 children under 1 year of age; pneumonia with 115, and "Rock drill pneumonia," or miner's phthisis, with 52. There can be no question as to the direct etiologic relationship of street and mine dust to bronchitis, pneumonia and tuberculosis, at least as a predisposing cause, by preparing by their mechanical irritation, a point of least resistance in which the essential microbic cause, pus microbes, pneumococci and the bacilli of tuberculosis locate, multiply and exercise their specific pathogenic effects, producing the characteristic type of inflammation. The health reports in Johannesburg, published in excellent form by Dr. Porter, are interesting in showing the kind of diseases physicians have to deal with on the high mountain plateau of South Africa.

The water supply of Johannesburg is obtained from wells 60 to 90 feet deep, drilled in the solid rock, and yielding an abundance of pure potable water. During one of the outbreaks of typhoid fever, Dr. Porter traced the infection to one of the wells, which had become contaminated through a fissure in a rock which led into the well. There are other sources of typhoid infection in the city; the removal of night soil in carts, the dust and the ignorance of the natives regarding matters of health, have contributed their share in propagating the disease, in a place supplied with water, usually free from typhoid germs. Through the energetic influence of the officer of health, a hotbed of disease was removed from the very center of the city, where a large settlement of blacks lived in filthy crowded huts. By prompt action of the city council, the recommendation of Dr. Porter to condemn the huts, remunerate the natives for their loss and colonize them outside of the city limits, was adopted and carried out, and the cleared space has now become a desirable place for private residences and business establishments, and the natives have been likewise benefited by the change.

During the year 795 cases of typhoid fever were reported to the health office, 710 whites and 85 blacks. Of the white patients, 206 were persons who either came into Johannesburg suffering from the disease, or developed it in two or three days after arrival. The total case mortality for the whites was about 13.8 per cent., while for the blacks it was 56.5 per cent., but the total number of blacks attacked (85) is hardly large enough to allow any safe conclusion to be drawn. The excessively high mortality among the blacks was, in all probability, due to the fact that only grave cases were seen by physicians, as well as improper diet and lack of nursing.

A glance at the tables giving an account of infectious diseases reported during the year, gives a good idea of the prevalence of these diseases, not only in Johannesburg, but all over the central part of South Africa and Cape Colony. The whole number of cases reported was 1,775. Among these I will give the figures of the more important diseases only; Typhoid fever, 795; gastric and typho-malarial fever, 5; malaria, 56; scarlet fever, 220; chickenpox, 155; puerperal fever and puerperal sepsis, 20; dysentery, 402; diphtheria, 66; membranous croup, 7, and erysipelas, 48. In this list two cases of leprosy are included. These figures show conclusively that the high plateau region of South Africa is almost free from tropical diseases, and that its healthfulness compares favorably with that of any other country. The climate is delightful, the air dry and bracing, the nights cool, and the day heat, even in midsummer, not distressing.

JOHANNESBURG HOSPITAL.

Johannesburg Hospital is the only general hospital in the city. A small hospital for the employés of the Rhodesia Railroad I did not visit. The Johannesburg Hospital is eighteen years old, has undergone many important changes since that time, and has been enlarged with the growing needs for accommodations for the increasing number of ill and injured. The hospital occupies a commanding position on one of the many hills of the city, and is surrounded by large grounds made attractive by paths, trees, shrubs and flowers. The hospital at present has accommodations for 380 patients. A large number of private rooms and a few small private wards are a source of material revenue with which to defray the heavy expenses of the institution. The main building and wings are two stories high and constructed of brick. The blacks are housed in two one-story cottages in the rear. In the ward for black women I counted only 13 patients. The number of black male patients in another ward was much larger.

I was much pleased to find a free bed in one of the general wards for Europeans in memory of the late President Kruger, established and to be maintained by friends of the deceased. The report of the hospital for the last year makes the following allusion to this: "As a memorial to the late President Kruger, about $1,000 was collected by several lady residents of the town and handed over to the board for the purpose of maintaining a bed in the free male wards. The board's thanks having been conveyed to the organizers, the bed was formally opened by General Beyers in the presence of the hospital board and staff, Dec. 21, 1904, and a brass plate giving the designation of the bed placed at its head."

Mr. G. E. Murray, F.R.C.S., does most of the operating and, so far as I could learn, is the most prominent surgeon in the city. We found him in the capacious operating room, which is well lighted and fairly well equipped, engaged in an operation for femoral hernia. His principal assistant was one of the sisters of the hospital, who has charge of the operating room. Mr. Murray used iodized catgut exclusively for buried sutures and ligatures, and is well pleased with the results, as since he has adopted this material, stitch abscesses in aseptic wounds are almost unknown. A few cases of cancer in the black have been observed in this hospital, but no cases of appendicitis.

It is a little strange, that in this city with more than 100 doctors, the hospital has not opened its doors so freely as it should to physicians who do not belong to the staff. A movement is now on foot to remedy this lack of hospital space by the building of another hospital for the outsiders, and this is certainly an effort in the right direction. The nursing is in care of 25 Anglican Sisters and 80 pupil nurses. A new nurses' home is on the way to completion at an expense of more than $100,000. The nurses have to undergo a course of instruction and training extending over three years before they can come up for the final examination. Graduate nurses in private practice are paid $25 a week. This liberal pay of private nurses is a great incentive for young women to enter the training school. The annual report of the hospital for 1905 shows that the whole number of indoor and outdoor patients, paying and free, was 12,398, of which 7,919 were outdoor patients. Of the 4,459 indoor patients, 3,256 were whites and 1,203 colored, and of these, 1,915 paid full hospital fees, 74 partial fees and 2,470 were treated free of charge. The average percentage of white-paying patients was 44, and of colored 44, certainly a good showing for the latter.

The government grant in aid for the year amounted to $75,000. I will omit reference to the medical statistics of the hospital, as it would be largely a repetition of what I have quoted from the report of the officer of health, Dr. Porter. A few notes from the surgical statistics will be of interest. Of 18 cases of attempted suicide, all Europeans, 7 died; of 253 cases of fractures of all kinds, the injury or its complications proved fatal in 25; out of 5 cases of intestinal obstruction, all white patients, only one died. Hernia appears with 40 cases, with 3 deaths, and strangulated hernia with 9 cases and 2 deaths. Appendicitis is credited with 52 cases, and of these patients 4 died. Pelvic surgery takes a conspicuous position in the surgical statistics and is headed by salpingitis with 26 cases in the white and only 2 in the black, with 2 deaths. Vesicovaginal fistula occurred five times. Among the rare operations, we noted one for pancreatic cyst and one for exstrophy of the bladder. Nowhere in Africa does stone in the bladder or kidney appear to be common. In this list we find only 2 cases of stone in the bladder and none of stone of the kidney. Of 25 cases of stricture of the urethra, only 2 were in colored patients. It is a very noteworthy fact that all cases of congenital and acquired deformity were white patients. These cases were 6 of harelip and cleft palate, 1 of spina bifida, 5 of clubfoot, 2 of hammertoe and 1 hypospadias. The surgical statistics cover almost the entire field of surgery, and the results certainly speak well for the operators of Johannesburg.

(To be continued.)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen in every-day practice.]

Intestinal Dyspepsia—A Correction.

In The Journal, Sept. 22, 1906, page 964, second column, near the bottom, the word *salve* appears in place of *salol.* Although the procedure would be harmless, we trust that none of our readers have made internal application of the external remedy inadvertently suggested. The prescription should read:

For putrefactive diarrhea with abdominal pain:

R.	Bismuthi subgal.	ʒii	8|
	Salol	gr. xxiv	1|65
	Ext. opii (denarcotized)	gr. iii	|20

M. Ft. capsulæ No. xii. Sig.: One capsule before meals.

Tertiary Syphilis.

In the treatment of the tertiary stage of syphilis J. C. Wilson, in *Applied Therapeutics,* states that the iodids are of more benefit than the mercurials. Unless the mercurials are administered with the iodids, however, the patient will in most cases suffer a relapse. The quickest and most positive results are, as a rule, obtained by combining the two, which produces a combined effect on the syphilitic virus that is not obtained by one of these preparations when given alone. The administration of the iodid, according to Wilson, hinders the elimination of the mercury by the kidney, so that a longer time is required for the process, as the mercury remains stored in the tissues and prevents relapses.

A course of potassium iodid should not be continued too long, and if improvement is not shown by its administration by the end of six weeks or two months, some other treatment should be instituted. Whether the iodids should be combined with the mercury or given separately, as well as the size of the dose to be given, should be governed by the character of the lesions, their extent and the part of the body involved. If the patient should be suffering from the skin eruptions of late syphilis, the mercury and iodids should be combined, and iron should be added if anemia is present. The author recommends the following combinations:

R.	Hydrarg. chloridi corros.	gr. i	|06
	Kalii iodidi	ʒii	8|
	Syr. ferri iodidi	fʒiv	15|
	Syr. sarsap. comp	f℥iii	90|
	Aquæ q. s. ad	f℥vi	180|

M. Sig.: One tablespoonful three times a day after meals, in water.

Mercuric iodid may be substituted for the corrosive sublimate as follows:

R.	Hydrarg. iodidi rubri	gr. iii	|20
	Potassii iodidi	ʒii	8|
	Syr. sarsaparillæ co	f℥iii	90|
	Aquæ q. s. ad	f℥vi	180|

M. Sig.: One tablespoonful in water three times a day.

When a tonic is indicated in conjunction with the specific treatment, Wilson recommends the following combination:

R.	Hydrarg. chloridi corros	gr. i	|06
	Tinct. ferri chloridi	fʒii	8|
	Liq. arsenii chloridi	gtt. xlviii	3|20
	Potassii iodidi	ʒii	8|
	Syr. zingiberis	f℥iii	90|
	Aquæ q. s.	f℥vi	180|

M. Sig.: One tablespoonful three times a day, in water.

Patients who suffer from pain in the bones, constant headache or syphilitic disease of the nervous system, may be given by preference, potassium iodid in doses of 20 to 60 grains (1.30 to 4.00) three times a day, beginning with small doses and gradually increasing the dose. In cases of gumma of the skin or subcutaneous tissue, corrosive sublimate should be given hypodermically and at the same time potassium iodid should be given internally in doses of 20 grains each (1.30)

The best local application under these conditions when ulceration has not taken place, is the blue ointment, with gentle pressure made by means of a bandage properly applied. If ulceration should take place the author recommends the following *ointment*:

℞. Cerati resinæ co.			
Ung. iodoformi, āā	ʒii	8	
Balsami Peru	ʒi	4	
Unguenti petrolati q. s. ad	℥i	30	

M. Ft. unguentum. Sig.: Apply locally.

Affections of the mucous membranes should be treated locally precisely as in the secondary period. If deep ulceration exists the iodids should be given in large doses. The proper care must be taken to keep the ulcer clean, and for this purpose he recommends Dobell's solution, followed by a local application of silver nitrate and this followed by a spray, as follows:

℞. Thymol	gr. iss		09
Menthol			
Camphoræ, āā	gr. v		30
Liq. petrolati	f℥i	30	

M. Sig.: To be used as a spray in the atomizer.

Benefit is derived from touching the ulcers with the tincture of iodin and the use of a gargle of the infusion of marshmallow. When the tertiary syphilis affects the tendons or their sheaths prolonged treatment is necessary. Locally the tincture of iodin is recommended, followed later by the following ointment:

℞. Ichthyoli	gr. viii		50
Unguenti hydrargi			
Unguenti belladonnæ, āā	ʒiii	12	
Unguenti petrolati	ʒii	8	

M. Ft. unguentum. Sig.: Apply locally.

Syphilis involving the brain, spinal cord and special nerves, mercury and the iodid should both be employed, combined with suitable tonics.

To aid digestion and promote constructive metamorphosis, Wilson recommends the following pill:

℞. Acidi arsenosi			
Strych. sulphatis			
Auri et sodii chloridi, āā	gr. i		06
Pepsini	gr. xl	2	65

M. Ft. pil. No. xx. Sig.: One after each meal.

The gold and strychnia should be continued for not less than six months. Iron should be added, if necessary.

In the treatment of hereditary syphilis, according to some authorities, the treatment should not be started until symptoms manifest themselves. Others state that a healthy child of a syphilitic father requires no treatment; if the mother was previously syphilitic, but has been free from all symptoms during the period of pregnancy, the child requires no treatment, but if the mother has recently been syphilitic, especially if symptoms of syphilis have been present during pregnancy, the child should receive treatment without delay. Wilson recommends the mercurial inunction as the best and most reliable treatment. Two drams (8.00) of the ointment may be spread on a piece of muslin or lint and applied to the child's body as a belly-band. This band should reach from the axilla to the groin and allowed to remain in place for three days, when it should be removed and the child's body gently washed with soap and water, followed by another application of the ointment. In this way trouble rarely arises. He speaks of mercury with chalk as a good preparation, given in doses of grain 1/12 each (.005), three times a day, by dropping it on the infant's tongue.

Corrosive sublimate in doses of grain 1/150 each (.0004) is also recommended, but is as a rule too irritating to the intestinal canal to be used for any length of time. The tannate of mercury is frequently of service, and this preparation is, as a rule, well borne by children, administered in milk. If marked *tertiary symptoms arise*, potassium iodid should be given in doses of from grain ½ (.03) to grain 1 (.06), in conjunction with the mercury.

Taylor and Bumstead recommend the following combination:

℞. Hydrarg. iodidi rubri	gr. i		06
Potassii iodidi	ʒiv	15	
Syr. sarsap. comp.			
Aquæ, āā	f℥ii	60	

M. Sig.: Five drops morning and evening for a child one month old, increasing the dose one drop every five days. If the child is over 5 years of age, one teaspoonful may be given three times a day.

Spartein.

In an abstract in the *Ohio State Med. Jour.*, Petty states that disappointment in the results obtained from the administration of spartein is due to the insufficient dosage. Most authorities recommend doses of grain 1/6 to 1/3 (.01 to .02) each. He states that the dose hypodermically should be 1½ grains (.09) and not less than 2 grains (.12) by the mouth can be relied on. Like quinin, it is regarded by Petty as nontoxic, and also its effects are definite. He regards it as the ideal heart tonic, decreasing the frequency and increasing the force of the heart's action like digitalis, but at the same time it relieves the burden of the heart by reducing the arterial tension through dilatation of the superficial and deep capillaries. It thus acts as a very efficient diuretic. Its effect lasts for six to twelve hours after administration. He recommends it in the treatment of irregular heart action, given in 2-grain doses (.12) by the mouth and repeated once in two or three hours, and then not oftener than once in four to six hours. In considering its action as a dilator of arterioles and as a heart tonic, thus allowing more oxygen in the lungs and in producing diuresis, Petty regards this preparation as of great service in cardiac failure of pneumonia.

Incompatibilities of Some of the Newer Remedies.

In the report of the committee on newer remedies of the New York State Pharmaceutical Association, according to the *Pharm. Record*, the task of avoiding incompatibilities in the use of the newer remedies of synthetic origin is becoming greater with the increasing number of these preparations. In this connection it is stated that a great many physicians are inclined to prescribe a large number of these preparations in wafers. Many of these preparations are unsuitable for prescribing in wafer form because they attract moisture, which softens the wafers. Among these are mentioned sodium bromid, calcium chlorid, strontium chlorid, chloral, the glycerophosphates, piperazin and the dry vegetable extracts. Iodids should not be prescribed in wafer form, as they decompose or change color.

The fact is also mentioned that many solid preparations when combined produce a liquid, as, for instance, camphor combined with naphthol makes a liquid.

Antipyrin and sodium salicylate when combined give rise to a semi-liquid substance. Antipyrin when combined with chloral gives rise to an oily liquid and similarly when combined with betanaphthol, salol, resorcin, phenol, pyrogallol, thymol or urethane.

Acetanilid is incompatible with chloral, thymol, resorcin or menthol.

Betanaphthol is incompatible with antipyrin, camphor, menthol, phenol or urethane.

Camphor monobromid is incompatible with chloral, phenol, salol and thymol. Camphor should not be combined with betanaphthol, chloral, phenol, pyrogallol, resorcin, salol, thymol or urethane.

Chloral is not compatible with acetanilid, camphor, camphor bromid, menthol phenacetin, phenol, salol, thymol or urethane.

Menthol can not be mixed with naphthol, pyrogallol, resorcin, salol, thymol or urethane.

Sodium salicylate should never be combined with antipyrin and phenol.

Phenacetin is incompatible with naphthol, chloral and phenol. While phenol decomposes antipyrin, naphthol, camphor, chloral, menthol, sodium salicylate, pyrogallol, resorcin, salol, thymol and urethane.

Pyrogallol is incompatible with antipyrin, camphor, menthol and phenol.

Resorcin, according to these reports, forms new compounds with acetanilid, camphor monobromid, naphthol, menthol, phenol and urethane.

Salol shows some chemical change with *antipyrin*, camphor, camphor bromid, chloral, phenacetin, pyrogallol and thymol.

Thymol is incompatible with acetanilid, antipyrin and camphor; also with chloral. menthol, phenol. salol and urethane. · Urethane shows changes with antipyrin, naphthol. camphor, chloral, phenol, pyrogallol, resorcin, salicylic acid. salol and thymol.

The report also speaks of the great care necessary in preparing mixtures of syrups containing acacia with certain phenol derivatives, as incompatibilities are liable to occur as the result of the presence of an oxidizing ferment in the gum, which may produce chemical changes by producing either a precipitation or at least a change in color as syrup of acacia gives a blue color to the resin of guaiac; a somewhat pinkish color with phenol. a grayish color with betanaphthol, a yellowish-brown color with pyrocatechin; and a deposit of crystals of oxymorphin with morphin hydrochlorid.

Syrup of acacia, it must be remembered, is also incompatible with eserin. adrenalin, syrup of tar and liquid preparations of aloes.

Medicolegal

Admissible Evidence as to Value of Physician's Services.

The Supreme Court of Colorado says that but one question was presented for determination in the case of Sills vs. Cochems: Is testimony tending to show that plaintiff was busily engaged in the practice of his profession admissible in an action brought by a physician to recover judgment for the value of professional services rendered, where the price to be charged for such services was not agreed on?

It is said that "when an attorney sues on a quantum meruit (as much as he deserved) for professional services, his professional standing is a proper subject of inquiry as affecting the value of his services. And the amount of his professional business may be inquired into, as tending to show his professional standing." Weeks on Attorneys at Law, 681; Phelps vs. Hunt, 40 Conn., 97. Counsel called the court's attention to no case, and it knows of none, wherein it is held that a different rule should obtain in determining the value of a physician's services. The same reasoning which prompts the doctrine as to attorneys seems to warrant its application to physicians.

The value of professional services may depend very considerably on the character and standing of him who performs them. In the first place there are diversities of gifts. The period of time passed in the profession, the experience acquired. degree of skill and the faculty of using professional knowledge make great differences in individuals. The services of some are worth more than the services of others, because they will command more. Should a question arise as to the value of services, in an action brought by a physician to recover fees, where the nature of the services performed makes the possession of certain qualifications to constitute an important element in the value of those services, as in this case where the plaintiff was called because of his peculiar skill as a diagnostician, evidence of professional standing is clearly admissible and is entitled to consideration.

The fact that the plaintiff was extremely busy tended to show his professional standing. and tended to show, in connection with other testimony concerning the length of time he had practiced medicine in that community, his experience, which gave him the requisite knowledge and ability to properly diagnose and prescribe the necessary medicines for diseased persons. If constant practice in the art of his profession renders a practitioner more capable than he otherwise would be. the extent of such a practice is a matter which may be properly inquired into for the purpose of determining the value of the services rendered.

Duty of Injured Person as to Employing Physician.

The Court of Civil Appeals of Texas says. in St. Louis Southwestern Railway Co. vs. Johnson, a personal injury case brought by the latter party. that the jury was instructed to the effect that it was the duty of the plaintiff to exercise that degree of care that an ordinarily prudent person would have exercised under the same or similar circumstances to employ a physician or physicians, and to secure proper treatment for his injuries, and that if he failed in this respect and his injuries were thereby increased that he could not recover for such increased injuries. This charge announced a correct proposition of law.

May Contract Against Future Professional Competition.

The Supreme Court of Tennessee says, in the case of Turner vs. Abbott, that its examination of the authorities has not confirmed the suggestion of counsel that a contract inhibiting future professional competition is not valid. unless at the time the party inhibited has an established practice or professional good will or a mercantile business which may be made the subject of sale. On the contrary, the court finds numerous cases, English and American, where a clerk or employé, teacher or salesman, on entering the service of a tradesman, manufacturer, or professional man, has been bound by a lawful contract not to engage in a competitive business with his employer. In the present case, the defendant was paid for his services as an assistant dentist, at a salary of $100 per month, which was large compensation to a young man who had just graduated, and under the authorities it was perfectly competent for the parties to make a contract that he would not open an office or practice dentistry in competition with the complainant when he ceased to work for the complainant in the town where the latter then was located and its immediate vicinity. The court thinks that this contract was reasonable and not oppressive; nor was it in any way detrimental to the interests of the public. In other words, it holds that such a contract is not in unlawful restraint of trade or against public policy, but is valid and enforceable. It says, besides what is above stated, that the general rule on this subject, deducible from the authorities, is that a contract in general restraint of trade, that is, not to engage in one's trade or profession at any place in the realm, is void as being contrary to public policy; but a contract not to engage in one's business or profession at a particular place. or for a period of time, is not invalid as being contrary to public policy, but such contracts will be upheld and enforced. And in this case the court affirms a decree restraining the defendant from the practice of dentistry in the town in question or its vicinity, in violation of the contract above mentioned.

Death of Minor from Anesthetic Administered for Operation Without Father's Consent.

The Supreme Court of Michigan says that the case of Bakker vs. Welsh and another was brought by a father, after being appointed administrator of the estate of his son who had died on an operating table at a hospital while chloroform was being administered preparatory to the removal of a tumor on his left ear about the size of a dove's egg. The claim was stated to be under what is known by the lawyers and the courts as the "Death Act." The son was 17 years old, and lived with his father on a farm. The record, instead of disclosing want of skill in the operation, showed quite the contrary. The principal point, therefore, presented was: Were the defendants liable in this action because they engaged in this operation without obtaining the consent of the father?

Counsel for the plaintiff were very frank with the court, it says, and stated in brief: "We are unable to aid the court by reference to any decisions in point. We have devoted much time and research to this interesting question, but have been unable to find any decisions of a higher court either supporting or opposing the plaintiff's contention, and we will therefore have to be content by calling the court's attention to such general reasoning as leads us to take the view herein contended for." They then argued at length and with a good deal of force that, as the father is the natural guardian of the child and is entitled to his custody and his services, he can not be deprived of them without his consent. "We contend," they said, "that it is wrong in every sense, except in cases of emergency, for a physician and surgeon to enter on a dangerous operation, or, as in this case, the administration of an anesthetic, conceded to be always accompanied with danger that death may result, without the knowledge and consent of the parent or guardian. It is against public policy and the sacred rights we have in our children that surgeons should take them in charge without our knowledge and send to us a corpse as the first notice or intimation of their relation to the case."

On the part of the defendants it was contended: (1) Consent of the father was unnecessary. (2) The lack of consent was not the cause of the boy's death, hence not actionable. (3) That if it were, the action did not survive under the death act. (4) That the action, if any, was in the father, not in the administrator. But the court does not think it necessary to a disposition of the case to decide all of the defenses interposed by the defendants.

The record, the court says, showed a young fellow almost grown into manhood, who has been for a considerable period of time, while living with his father, afflicted with a tumor. He has attempted, while at home, to have it removed by absorption. It does disappear, but after a time it reappears. He goes up to a large city, and with an aunt and two sisters, all adults, submits to examination, receives some advice, and goes back to his father with an agreement to return later to receive the report of the expert who is to make the microscopic examination. He returns accordingly, and with at least some of his adult relatives arranges to have a surgical operation of a not very dangerous character performed. Preparations are made for its performance. There is nothing in the record to indicate that, if the consent of father had been asked, it would not have been freely given. There is nothing in the record to indicate to the physicians, before entering on the operation, that the father did not approve of his son's going with his aunt and adult sisters, and consulting a physician as to his ailment, and following his advice. The court thinks it would be altogether too harsh a rule to say that under the circumstances disclosed by this record, in a suit under the statute declared on, the defendants should be held liable because they did not obtain the consent of the father to the administration of the anesthetic. Judgment for the defendants affirmed.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below:

Boston Medical and Surgical Journal.

September 15.

1 Chemistry of the Bacterial Cell and a Study of the Effects of Some of the Split Products on Animals. V. C. Vaughan, Ann Arbor.
2 *Artificial Nauheim Baths in Chronic Heart Cases. P. K. Brown, San Francisco.
3 Systemic Infection Through the Tonsils. J. L. Goodale, Boston.
4 Problems of Venereal Prophylaxis; Remedial Suggestions Relating to It. A. L. Wolbarst, New York.
5 Septic Infection Through the Fauces. G. A. Leland, Boston.

2. **Artificial Nauheim Baths in Heart Disease.**—The bath employed by Brown is merely a bicarbonate of soda and acid sodium sulphate bath without the chlorids. He says that the cases peculiarly fitted for Nauheim treatment are those in which the heart muscle acts insufficiently, either from dilatation, poor blood supply or arteriosclerosis with changes in the muscle; poisoning, notably tobacco poisoning, and fatty changes of moderate degree. Brown does not believe that the use of resisted *movements* with the Nauheim baths is essential. They are often very tiresome to the patient and are dangerous in bad cases, unless given by a person who understands fully the purposes of them and who realizes that every case is a law in itself. In his experience Brown has found it best to give these exercises an hour or two before the bath, and when this is not possible, a number of hours after the bath. He has found massage in connection with the treatments of advantage, particularly when the temperature of the bath was below 90.

New York Medical Journal.

September 15.

6 *The Ataxic Rectum. C. F. Martin, Philadelphia.
7 Palatable Medication. H. B. Sheffield, New York.
8 Ocular Insufficiency and Some of Its Results. E. M. Alger, New York.
9 Rheumatic Cricoarytenoid Ankylosis. H. P. Moseley, New York.
10 Physical Training a Factor in Psychologic Development. M. W. Barr, Elwyn, Pa.
11 *Rational Treatment of Diabetes Mellitus. T. S. Hart, New York.
12 The Diseased Faucial Tonsil as a Causal Factor in Respiratory and Gastric Diseases. A. R. Solenberger, Colorado Springs, Colo.
13 Case of Ectopic Gestation with Bilateral Suppurative Salpingitis and Adenomyoma of the Uterus. S. E. Tracy, Philadelphia.
14 *Instillation of Carbolic Acid into the Eye from a Medicine Dropper Through Mistake. J. C. Carter, Denison, Texas.
15 The Kidney of Pregnancy. D. W. Prentiss, Washington, D. C.

6. **Ataxic Rectum.**—On examining a number of tabetic cases, Martin found that all showed a sensory paralysis of the external sphincter, although considerable power seemed to remain in the internal sphincter. In three cases of tabes another peculiarity was noted, which was that when the finger was withdrawn the anus did not immediately contract, but remained patulous. Martin says that inasmuch as the rectal and vesical symptoms come on early in the course of tabes, a paralyzed external sphincter, with a history of persistent constipation, should suggest to the mind of the examiner the necessity of trying the other reflexes. The addition of bladder disturbances *may be considered* very suggestive of some changes taking place in the spinal cord, interfering with the transmission of voluntary impulses from the brain. The disturbance of the other reflexes, such as the loss of knee jerk, poor station, and impaired papillary reflexes, will frequently clear up the diagnosis.

Martin has found that the treatment of these cases of ataxic constipation is decidedly unsatisfactory. Probably the best results can be obtained by the regular administration of mild laxatives. The patient should be encouraged to make periodic attempts at stool, and should try the effect of massage over the colon and the lower abdomen. The administration of small doses of the alkaloid of the ripe seed of the calabar bean seems to stimulate peristalsis to a certain extent. A morning dose of sodium bicarbonate seems to work well when the case is a mild one. When there is a persistent tendency toward attacks of fecal impaction the patient should take a high colonic injection of cold or cool water in the morning. This is to empty the lower bowel so as to rid the patient of the annoyance of the pressure of feces in the rectum. In addition to the care of the alimentary tract, attention should be paid to the urinary tract, and a constant lookout kept for any symptoms pointing to urinary retention or vesical paralysis.

11. **Treatment of Diabetes Mellitus.**—Hart defines diabetes mellitus as a disease of faulty metabolism characterized by a deficient power of oxidation resulting in the incomplete combustion of the carbohydrates and fats of the food and of the tissues. Hart protests against the belief that urine with its specific gravity of 1020 can not contain sugar. He refers to 50 instances in which the specific gravity was from 1006 to 1018 *in each of which sugar had been demonstrated.* All treatment instituted must be directed toward improving the powers of oxidation. It is Hart's custom to give the patient written instructions for his dietary for each meal for a week, each day cutting off a little more carbohydrate food, until on the seventh day the diet is composed of a definite quantity of fats and proteids only. The diet for this day is as follows and is termed the "standard diet:" Breakfast: 150 c.c. of coffee with two teaspoonfuls of thick, sweet cream, two poached eggs, four slices of bacon, and butter. Dinner (midday): 150 c.c. of clear bouillon; broiled fish with *mayonnaise dressing;* roast beef, 200 grams; spinach or asparagus, salad of lettuce and tomatoes with French dressing, cream cheese, 20 grams; butter; one small cup of black coffee. Supper: Beefsteak, 200 grams; eggs, scrambled, without flour; cup of tea; string beans, lettuce salad with French or mayonnaise dressing. For the next two days the patient continues on the standard diet to which is added an "accessory diet" of 100 grams of wheat bread equally divided between the morning and midday meals. The twenty-four hours' urine is collected and examined. If glucose is present the patient is allowed the standard diet plus a diminished accessory diet, e. g., 80 grams of wheat bread. If the glucose is absent he is given the standard diet plus an increased accessory diet, e. g., 120 grams of wheat bread. A study of the individual case is all important.

14.—A report of this case appeared in The Journal, July 7, 1906, page 37.

Medical Record, New York.

September 15.

16 *How May the Medical and Teaching Professions Co-operate to Improve the Moral, Mental, and Physical Condition of the Young? S. A. Knopf, New York.
17 *Clinical Observations Concerning the Nasal Passages and the Relation They Bear to the Organs of Sight and Hearing. A. G. Bryant, Boston.
18 *A New Axis-Traction Apparatus. A. C. Jacobson, Brooklyn, N. Y.
19 *Results from the Bloodless Reduction of Congenital Hip Dislocation. W. G. Stern, Cleveland, Ohio.
20 *An Unrecognized Etiologic Factor in the Summer Diarrheas of Infants. J. L. Walsh, Caseville, Mich.

16. See abstract in The Journal, July 28, 1906, page 301.

17. Relation of Nasal Passages to Eyes and Ears.—Bryant emphasizes the necessity of attending to the first symptoms of nasal and nasopharyngeal obstructions which are so often the causal factor in producing cerebral symptoms, and many diseases of the eye, ear, larynx, chest as well as stomachic and intestinal disorders, and more general disturbances, nervous and reflex conditions.

18. New Axis-Traction Apparatus.—Jacobson's apparatus is composed of a clamp, which attaches to the edge of a table; an outer case, enclosing a worm and gear (which multiply the power); two rods, the lower one telescoping, joined to the clamp by universal joints; a crank-handle for operating the power-producing mechanism; a hand-wheel at the outer end of the telescoping rod for controlling the transit of the outer end of the apparatus through the orbit which it must describe, when in operation, around the universal joints as pivotal points, a steel tape, which may be replaced by another if kinked without taking things apart, and which winds up on a drum on which it is held and around which it is guided by a metal case containing an aperture into which the tape passes and which does not itself revolve; a small axle on which the gear revolves, and a dynamometer, one of the needles of which is pushed along as an index by the needle proper, remaining at the maximum point reached during the operation for later reference. The needle is true to the scale, whether traveling up or down. The apparatus is made chiefly of an aluminum composition, and weighs about five pounds. This instrument enables the accoucheur to employ measured, steady and precise axis-traction, with a minimum of force and no expenditure of physical energy on his part.

19. Results from Bloodless Reduction of Congenital Hip Dislocation.—Stern reports statistics, gathered from operators scattered all over the world, which very nearly agree with those as first given out by Lorenz as his own experience. The number of hips reported as successfully operated on since 1900 is 2,593. Ideal results, restitutiones completæ, 48.98 per cent.; anatomic restitutions, 41.76 per cent., 1,084; excellent functional results, 7.22 per cent., 187. Good function from transpositions, 39.98 per cent., 1,036. Failure, redislocation, band function, 12.10 per cent., 314. The discrepancy between failures and good results (about 1 per cent.) is due to inaccuracy of many of the reports. Individual operators have had far better results. These latter results will and must be attained through careful and painstaking work, combined with increasing experience and advanced methods.

20. Unrecognized Etiologic Factor in Summer Diarrheas of Infants.—Walsh calls attention to the cathartic property in the grasses which form the food of so many cows from spring to autumn. This property disappears when the grass is dried in the form of hay. The mortality curve follows the life of this type of vegetation, reaching its maximum in July, then gradually declining. Infants get the full physiologic effects and often the toxic effects of the aperient properties in the milk from the grass-fed cows. From October to May there is almost none of this diarrheal tendency apparent. Sterilization does not destroy this poison, which is a chemical one. The cow whose milk is used for infants should be kept off of pasture, and should be stall-fed, as in the winter. The chemistry of the grasses, Walsh states, offers a comparatively new field for study.

St. Louis Medical Review.

September 8.

21 The Problem of Sexual Variants. T. H. Evans, Philadelphia.
22 Origin and Heredity of Matter. (To be continued). J. Wright, New York.

Lancet-Clinic, Cincinnati, Ohio.

September 15.

23 Surgical Treatment of Intestinal Indigestion. E. Harlan Cincinnati.
24 Modern Medical Expert vs. St. Paul, et al, A. N. Ellis, Maysville, Ky.

American Journal of Obstetrics, New York.

September.

25 *Construction of a New Vagina. (To be concluded.) A. Brothers, New York.
26 *Artificial Renal Colic as a Valuable Means of Diagnosis. H. T. Hutchins, Baltimore.
27 Some Common Varieties of Obstructed Labor. S. P. Warren, Portland, Me.
28 A Case of Cyclocephalus in Guam. N. T. McLean, U. S. N.
29 The Fetich of the Ovary. E. V. DeWarker, Syracuse, N. Y.
30 Bladder Affections in Gynecologic Cases. H. Grad, New York.
31 *Excision of a V-shaped Piece of the Posterior Uterine Wall for Anteflexion of the Cervix with the Aid of an Intrauterine Holder. R. C. Coffey, Portland, Ore.
32 Intussusception. C. B. Miller, Washington, D. C.
33 *Large Gelatinous Tumor of the Ovary. A. L. Smith, Montreal, Canada.

25. Construction of a New Vagina.—The patient on whom Brothers performed this operation was 21 years of age. The vagina was represented by a quasi-mucous membrane diaphragm, which could be depressed to a distance of a little more than an inch. Careful and repeated examinations failed to discover any distinct evidence of uterus, tubes or ovaries. Beginning just below the meatus urethra, the incision was carried in a circular manner across to the labium minor, down to the perineum and up on the opposite side to the starting point. This circle of quasi-mucous membrane was dissected away in part at its circumference and presented the firmest attachment to the urethra and bladder with lesser adhesions to the lateral regions and rectum. Neither catheter in the bladder nor finger in the rectum was deemed necessary at any stage of the operation. Several bleeding points at the sides were readily controlled by ligatures or torsion. With Sims' glass dilator (1¼ x 4 inches) the diaphragm was firmly pressed against, so that, by dint of snipping in the surrounding connective tissue and considerable pressure against the dilator, the saucer of mucosa was pushed upward to the full length of the dilator, leaving a cylindrical gap of raw tissue below it. While the dilator was kept under tension and pressed firmly against the vaginal vault, an assistant secured Thiersch skin grafts from the inner side of the patient's thigh, and these were placed over the raw surface by tilting the dilator in different directions. At the completion of the operation the dilator was surrounded at its vulvar end with gauze and retained in position under tension by means of long strips of adhesive plaster secured to the buttock and abdomen to prevent the disarrangement of the grafts. A permanent catheter was left in the bladder and the bowels were kept constipated during five or six days.

At the end of this time the dilator was removed, when it was found that a ring of grafts had become adherent within the vaginal canal to a depth varying between ½ inch and ¾ inch. The mucous membrane at the vault looked normal, but there was a raw gap between the two. Suggestions to repeat the grafting over this area were met with refusal on the part of the patient, especially as there seemed to be some prospect of the gap being gradually covered over by the growth of the new skin. The patient was kept in the hospital for a month, the vaginal canal was kept patent by means of a glass dilator which measured 1⅛ x 4 inches. This was kept in place by a stem perforating a cork closing up the open end of the glass dilator. Through the stem two rubber tubes passed antero-posteriorly and were secured to an abdominal belt on the principle of a McIntosh uterine supporter. This the patient wore with perfect comfort, night and day, and she left the hospital with instructions to keep on wearing it during a protracted period of time.

When examined at this time, two fingers easily passed in to a depth of four inches, and the result was regarded as very encouraging. There was not much progress in the extension of the new skin upward, so that she was advised to return to the hospital and have the raw surface still present covered with grafts. The posterior vaginal surface presented an area of one inch in depth covered by the new skin and two fingers passed readily to a depth of four inches. The vaginal granulating surface was thoroughly curetted and temporarily packed with gauze to check the bleeding. A cylinder had been prepared in the following manner: A glass dilator measuring ½ inch in diameter and 3 inches in length was carefully and smoothly covered with iodoform bandage, until its diameter measured one inch. Over this a thin rubber pouch was snugly drawn and then perforated at numerous points so as to permit the absorption of discharges. On this cylinder grafts of thin skin, secured by a razor from the left thigh, were placed with the raw surface exposed and secured by means of fine catgut. Excepting the two extremities of the cylinder, the entire surface was thus covered over with new skin. The vagina was then thoroughly exposed (after removing the gauze) by means of three deep and narrow-bladed retractors, and the graft-covered plug was introduced. By carefully withdrawing each retractor, exerting pressure centrifugally during the process, the plug was left in the canal with the raw surfaces of the grafts in intimate juxtaposition with the raw vaginal wall. A self-retaining catheter in the bladder and plaster strips retaining the gauze-covered plug in situ completed the operation. The bowels were kept confined with opiates and the patient rigidly maintained the horizontal decubitus during seven days.

At the end of this time the plug was removed and, with the exception of a small area in the left side of the vaginal floor, the entire canal was covered with smooth epithelium. The retention catheter was removed, the bowels were moved and a glass plug (three inches in depth) was secured in place with the McIntosh supporting apparatus. No attempt was made to use a longer or wider tube for fear of disturbing the grafts, some of which had loose ends. One year after the first intervention the patient stated that intercourse had been maintained several times weekly to the complete satisfaction of both parties.

26. **Artificial Renal Colic as Means of Diagnosis.**—Hutchins found that the ability to reproduce, mechanically or otherwise, the pain of which a patient complains is always a most valuable aid in diagnosis. A definite and typical kidney pain (renal colic) can be produced in every instance by forcibly distending the pelvis of the kidney with a bland fluid. In a large majority of cases (98 per cent. in his series), patients are able accurately to differentiate renal pain caused by the method described above, from pains from other causes. By this method a diagnosis can frequently be made in a class of cases, as yet undifferentiated by the medical profession and in which the symptoms are vague and indefinite. Accurate measurements of the amount of dilatation of the pelvis of the kidney may be made with the instrument used, and by this means valuable data are obtained.

The 100 cases studied are divided into four groups: 1. Normal kidney pain produced. Not that pain of which the patient complained. Disease of the kidney ruled out. 2. Kidney pain reproduced. Same pain as that of which the patient complained. Diagnosis of renal or ureteral disease confirmed. 3. Dilated pelvis of kidney. Stricture of ureter. 4. Doubtful cases and failures. Group 1 includes 23 cases. In all the cases, typical kidney pain was produced by the injection of fluid into the kidney pelvis. This pain had a definite location in the superior lumbar triangle. In no case, however, did the pain produced correspond in any particular with the pain of which the patient had previously complained, and disease of the kidney, due to any cause which might lead to permanent or intermittent dilatation of the kidney pelvis, was ruled out. The diagnosis was confirmed later at operation. Group 2 includes 50 cases. In all these cases typical kidney pain or pain referable to the kidney was reproduced and was at once recognized by the patient as the pain of which they had complained and for the relief of which they had entered the hospital. In 35 cases, 25 right and 10 left, the kidney was found to be movable and was suspended. In 8 cases, 4 right and 4 left, the kidney was movable, but operation was refused. In 2 cases, 1 right and 1 left, treatment by bandage was advised. In 3 cases nephrotomy was performed with relief of symptoms. The uterus was suspended in one case and the apendix removed in one case, neither operation affording any relief from the pain.

Group 3 includes 17 cases. In 10 of these cases no operation on the kidneys was performed; pregnancy was a contraindication in one; in another the disease was bilateral, and in a third the patient passed a stone spontaneously. Seven patients refused operation. Of the remaining 7 cases, the kidneys were suspended and the renal pelves folded in one; the stomach, liver and kidneys were suspended in another; stone was removed from the ureter in 2; the ureter was retransplanted into the bladder in one; stricture of the ureter was freed in one; and the kidney was removed in one case. Group 4 includes 10 cases. These cases indicate the limitations of this method of diagnosis. In 6 cases the answers of the patients were so indefinite or the location of the pain produced was so vague that a positive diagnosis could not be made. In 3 cases the same pain was reproduced and its location was fairly definite, and yet in one omental adhesions were found, in another gallstones, and in the third no disease of the kidney was detected. These three cases are regarded as failures. Three of the patients had had previous operations for the relief of pain, but without beneficial result. In one case there was present a large notched tumor of the right flank, supposed to be sarcoma of the kidney. Injection caused pain in this tumor. At autopsy the tumor was found to be of hepatic origin, but closely associated with the right kidney. Pain was easily referred to the tumor by the patient.

31. **Uterine Wall Operation for Anteflexion of Cervix.**—The steps in Coffey's operation are: First, pull down the cervix and uterus with bullet forceps or double tenaculum. Second, insert a cat-claw tenaculum, protrude the fangs and pull the uterus down as far as possible. Third, incise the vaginal mucous membrane at the back of the cervix and dissect up the peritoneum on the posterior surface of the uterus far enough to excise the wedge. Fourth, close the V-shaped incision with strong three-weeks' catgut sutures.

33. **Large Gelatinous Tumor of Ovary.**—Smith reports the case of a woman, aged 54, who complained of a large abdominal tumor, which she had first noticed about a year previously. The abdomen was distended to double the size of a full-time pregnancy by an ovarian cyst, which did not, however, give the usual wave on percussion. The tumor interfered with her breathing so much that for the last six months she had been unable to lie down at night. At the operation the tumor was found to be adherent to the entire abdominal wall in front, but it was easily separated by the hand. The pedicle, which was four inches wide, was hemmed so as not to leave any raw surfaces for the intestine to adhere to. About a quart of free jelly was then removed from the abdominal cavity, but whether this had come out of the small trocar hole made twenty-four hours previously, or whether it came from a rupture of the cyst wall at the back, Smith was unable to say. It appeared as though it had been there for a long time. The contents of the cyst were not like ordinary colloid viscous material, but were more like jelly.

The Journal of Medical Research, Boston.

July.

34 *Studies in Absorption. B. H. Buxton and J. C. Torrey, New York.
35 Microscopic Evidences of Absorption in the Large Intestine. J. L. Bremer, Boston.
36 Two Modifications of the Leischman Stain. R. C. Whitman, Chicago.
37 Regenerative Changes in the Liver: A Study of Experimental Lesions in the Dog. R. M. Pearce, Albany.
38 Simple Way of Using Buchner's Method for the Cultivation of Anaërobic Bacteria. H. J. Nichols and F. Schmitter, Washington, D. C.
39 Trypanosomata and Trypanosomiasis. E. N. Tobey, Boston.
40 Trypanosomata of the Newt. E. N. Tober, Boston.
41 Relation of Autolysis to the Histologic Changes Occurring in Necrotic Areas. H. G. Wells, Chicago.
42 *Case of Blastomycosis: Results of Culture and Inoculation Experiments. J. T. Bowen and S. B. Wolbach, Boston.
43 A New Toxic Action of Horse Serum. M. J. Rosenau and J. F. Anderson, Washington, D. C.

34. **Studies in Absorption.**—Buxton and Torrey investigated the methods by which the animal organism disposes of foreign substances in suspension, e. g., bacteria introduced into the

abdominal cavity. In the case of lampblack some of the particles are taken up by the phagocytes, while others quickly reach the organs, especially the liver and spleen. In the case of typhoid bacilli there may occur an explosive destruction; if destruction is more gradual, large numbers of bacilli make their way into the circulation and are deposited in various organs, especially the liver. There seems to be an immediate rush of particles toward the lymphatics of the diaphragm, whence they pass into the lymph trunks of the anterior mediastinum and then quickly reach the circulation. In time phagocytosis takes place, but at first the particles are free. Another channel of departure from the peritoneum is the omentum. Particles and phagocytic cells become entangled in the fibrinous deposits on its surface. In rabbits especially are typhoid bacilli found on the surfaces of the omentum. Rapid destruction is associated with accumulations of polynuclears, but in general the authors emphasize the part played by mononuclear cells as phagocytes.

42. **Blastomycosis.**—Bowen and Wolbach report a case of blastomycosis in which there was great hyperplasia of the epidermis, minute abscesses surrounded by epithelium, and chronic inflammatory changes in the corium. The organisms were present only in small numbers. Successful cultures were made. The organisms grew on all ordinary media, and best at a temperature slightly above that of the room. The addition of sugars did not materially influence the rate of growth, and there was no marked fermentative action. Inoculation experiments were made with pure cultures on rabbits, guinea-pigs and white mice. The last mentioned were the most susceptible, the alveoli of the lungs being filled with large cells and organisms.

Bulletin of the Johns Hopkins Hospital, Baltimore.

September.

44 *Results of Operative Treatment of Varicose Veins of the Leg by the Methods of Trendelenburg and Schede. R. T. Miller, Jr., Baltimore.
45 Blood Pressure Changes in Cheyne-Stokes Respiration. J. A. E. Eyster, Baltimore.
46 Observations on a Case of Palpitation of the Heart. A. D. Hirschfelder, Baltimore.
47 The Irish School of Medicine. J. J. Walsh, New York.
48 John Huxham of Devonshire (1692-1768). W. J. Vogeler, Yonkers, N. Y.
49 Popular Medicine in the Eighteenth Century. E. C. Hill Smithville, Mo.
50 American Hookworm (Necator Americanus) in Guam and China. C. W. Stiles, U. S. P. H. and M.-H. S.
51 Sahli's Desmoid Reaction in Gastric Diagnosis. T. R. Boggs, Baltimore.

44. **Operative Treatment of Varicose Veins.**—Miller presents the results of treatment of varicose veins of the leg as practiced in Johns Hopkins Hospital. Some of the cases were followed ten years or more. Miller claims that varicose veins of the leg are not an incident of senility; the condition is rather a disease of young and middle-aged individuals, over one-third of the cases appearing before the thirtieth year and two-thirds before the fortieth year. From an etiologic standpoint there are two classes, viz., inflammatory and non-inflammatory. The inflammatory group includes about one-third of all cases, phlebitis occurring as a complication or sequel of pregnancy, postoperative convalescence or an acute infection, among which typhoid fever is the most frequent. The pathology of the non-inflammatory group is obscure. In 128 cases the right and left legs are affected in about equal proportion: over one-half of the cases are bilateral. Trendelenburg's operation cured 78 per cent. in a series of 41 cases; this is about the result generally reported. In the first 4 postoperative years 89 per cent. were cured, from the fifth to the eighth postoperative years but 63 patients were cured; the tendency to recurrence of symptoms increases as the postoperative interval lengthens. Schede's operation cured 33 per cent. in a series of 9 cases. Two patients, two years or less since operation, were both cured. Of seven patients, more than two years since operation, but one was cured.

The tendency to recurrence of symptoms as the postoperative interval lengthens is much greater after a Schede than after a Trendelenburg operation. Division between ligatures of the saphenous vein does not ensure permanent occlusion. The venous stream may be reëstablished in three ways, viz.: Dilatation of anastomoses around the point of division (two cases); formation of varices in the scar (three cases); or end-to-end anastomosis of the ligated stumps (three cases). The Schede operation is followed particularly by anastomosis of ligated stumps. Of 6 patients examined there showed an intact saphenous vein running directly through the scar. Functional restoration of the saphenous vein may be, but is not always, accompanied by recurrence of symptoms. Resection of 8 cm. or more of the saphenous vein at the saphenous opening, made through a generous transverse skin incision, is to be preferred to simple division of the vein. Postoperative pulmonary embolism is rare, but has occurred between the fourth and thirteenth days. The onset is marked by sudden dyspnea, cyanosis, tachycardia and signs of collapse accompanied by rise in temperature; the symptoms may subside rapidly, may persist with the physical signs of pulmonary infarct, or may be followed immediately by sudden death.

American Journal of Surgery, New York.

September.

52 Frequency of Blindness Due to an Affection of the Accessory Sinuses. H. M. Fish, New York.
53 Cancer of the Breast, Necessity for Early, Radical Operation. J. C. Stewart, Minneapolis.
54 Ether Narcosis by Rectum. J. A. Stucky, Lexington, Ky.
55 *An Improved Postoperative Rectal Tube. J. M. Lynch, New York.

55. **Improved Postoperative Rectal Tube.**—The tube used by Lynch is made exactly like Tuttle's tube with the exception of the collar which prevents its slipping into the rectum. Lynch describes his tube as follows: Select a piece of stiff rubber tubing about five inches long and one-half inch in diameter, and a thin rubber condom. Cut a small hole in the blind end of the condom and pass the rubber tube over this hole into the cavity of the condom to the extent of about one-half an inch. Tie the condom around the tube with a piece of thread. Then wrap the tube with gauze or cotton to the thickness desired by the operator for distending the sphincter, covering about three inches of the tube. Reflect the rubber condom over this gauze and tie it around the tube at the point where the gauze ceases, leaving one inch or more of the open end of the condom beyond the end of the tube. Now wrap a small roll of absorbent cotton around the tube at the point where the last thread is tied around the gauze, making this roll large enough to form a prominent collar. Then reflect the loose end of the rubber condom backward over this roll and tie it with a piece of silk thread, or throw around it a small rubber ligature. Thus is formed a complete rubber tube with a flange or collar on its lower end; this collar absolutely prevents the tube from slipping into the rectum and at the same time furnishes an excellent means of producing pressure on any surface around the margin of the anus. Such tubes should always be introduced through a bivalve speculum or with the rectum held open by two flat retractors, in order to prevent any tearing of the parts.

The Canadian Journal of Medicine and Surgery, Toronto.

July.

56 A Series of Intestinal Anastomoses. T. S. Cullen, Baltimore.
57 The British Medical Association—Toronto Meeting, August 21-25, 1906.

August.

58 Acute Descending Paralysis—Landry's Paralysis. A. McPhedran, Toronto.
59 Preliminary Program of the Seventy-Fourth Annual Meeting of the British Medical Association.

Medicine, Detroit, Mich.

August.

60 *Botanical Diagnosis of Leptothrix Racemosa and Its Relations to the Modern Doctrine of Bacteriology. F. Vicentini, Chieti, Italy.
61 Etiology of Apoplexy. C. L. Mix, Chicago.
62 Prognosis and Treatment of General Apoplexy. J. Grinker, Chicago.
63 General Symptoms of Apoplexy. D'O. Hecht, Chicago.
64 Cerebral Localization in Apoplexy. S. Kuh, Chicago.

60. **Botanical Diagnosis of Leptothrix Racemosa and Its Relations to the Modern Doctrine of Bacteriology.**—This elaborate paper was prepared for the Section on Stomatology at the recent session of the American Medical Association in Boston, but was not read, as Dr. Vicentini was unable to attend.

Wisconsin Medical Journal, Milwaukee.

August.

65 *Purpura. W. H. Neilson, Milwaukee.
66 *Apoplexy, Its Diagnosis and Treatment. U. O. B. Wingate, Milwaukee.

65-66. See abstracts in THE JOURNAL, July 14, 1906, page 143.

Northwest Medicine, Seattle, Wash.

August.

67 Sources of Infection of Typhoid. J. M. Semple, Spokane.
68 Early and Differential Diagnosis of Typhoid. R. M. Smith, Seattle.
69 Public and Professional Indifference to Typhoid, Prophylaxis in Rural Districts, Small Towns and Cities. E. E. Heg, Seattle.
70 Water Supplies of Cities and Towns as Bearing on the Prevention and Spread of Typhoid. R. A. Bebb, Tacoma.
71 Case of Amebic Dysentery, Originating in Montana; Case of Latent Malaria. J. F. Spelman and W. B. Wherry, Anaconda, Mont.

Columbus Medical Journal.

August.

72 Diagnosis and Treatment of Incipient Pulmonary Tuberculosis. J. D. Dunham, Columbus.
73 Tuberculosis in State Hospitals. G. Stockton, Columbus.
74 Abort Inflammatory Diseases. J. M. Shaller, Denver.

Detroit Medical Journal.

August.

75 Suggestions to the Medical Witness. C. A. Lightner, Detroit.
76 Treatment of the Albuminuria of Pregnancy. C. G. Jennings, Detroit.
77 Progress in Pathology and Bacteriology. J. Sill, Detroit.
78 Tuberculosis in Detroit. G. L. Kiefer, Detroit.

The Laryngoscope, St. Louis, Mo.

August.

79 Ocular Manifestation in Intracranial Diseases of Otitic Origin. W. E. Spicer, New York.
80 Relation of Systemic Diseases to Otitis Media Purulenta and Its Complications. J. J. Thomson, New York.
81 Treatment of Acute Suppurative Otitis Media. E. P. Fowler, New York.
82 Clinical Value of the Blood Examination in Otitis Media Purulenta and Its Complications. L. M. Hubby, New York.
83 Bacteriology of Suppurative Ear Diseases. D. S. Dougherty, New York.
84 Lumbar Puncture; Its Clinical Value in the Intracranial Complications of Suppurative Otitis Media. S. J. Kopetzky, New York.
85 Etiology, Diagnosis and Treatment of Auricular Chondritis and Perichondritis. L. J. Denchfield, New York.
86 Technic of Ossiculectomy. R. J. Held, New York.
87 Observations on the Fossæ of Rosenmüller. T. L. Brunk, Decatur, Ill.

Milwaukee Medical Journal.

August.

88 President's Address Before the Brainard Medical Society. G. J. Kaunheimer, Milwaukee.
89 Etiology, Symptomarology and Diagnosis of Placenta Prævia. E. J. Butzke, Milwaukee.
90 Placenta Prævia. J. J. Schoots, Milwaukee.
91 Eye Clinic of the University of Breslau. C. Messmer, Breslau, Germany.
92 Gynecology. E. F. Fish, Milwaukee.

Medical Fortnightly, St. Louis.

September 10.

93 Urethrotomies. R. Harrison, London.
94 Diagnosis of Pyloric Stenosis. E. Walker, Evansville, Ind.
95 Treatment of Chlorosis. G. F. Butler, Chicago.

American Journal of Urology, New York.

September.

96 Surgery of the Ureter. E. Fuller, New York.
97 Symptomatology of Ureteral Diseases. D. H. Stewart, New York.
98 Ureteral Lavage. W. Ayres, New York.
99 Cystotomy in the Female. E. Garceau, Boston.

Mississippi Medical Monthly, Vicksburg.

September.

100 President's Address Before the Bolivar County Medical Society. J. M. Wells, Cleveland.
101 Employment of Rest in the Rational Treatment of Pulmonary Tuberculosis. M. D. Ethridge, Silver City, N. M.
102 Surgical Shock. E. R. Gordon, McComb City.
103 Multiple Neuritis—Its Diagnosis and Treatment. H. L. Sutherland, Rosedale.
104 Drugs—Their Use and Abuse. L. D. Dickerson, McComb City.

The Medical Standard, Chicago.

September.

105 Bromin in Septic Conditions. M. O. Terry, New York.
106 Successful Treatment of Sprains with Mechanical Vibration. N. M. Eberhard, Chicago.
107 Professor Eiselberg's Clinic. L. Waite, Chicago.
109 Practical X-Ray Therapy. N. M. Eberhard, Chicago.
110 Tractus Vascularis and Tractus Nervosus in Splanchnoptosia. B. Robinson, Chicago.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

September 1.

1 *Educational number.

1. Educational Number.—In accordance with its custom the *British Medical Journal* devotes this entire issue to a discussion of subjects that have a direct bearing on medical education. The first editorial is on "The Profession of Medicine" and discusses this from the standpoint of what the profession has to offer a physician socially, intellectually and commercially. The second editorial, entitled "The Portals of the Profession," considers the question of the degree, the choice of a medical school, and the cost of a medical education. The regulations of the general medical council, preliminary, scholastic, etc., are also considered. Other topics mentioned more or less fully are the English medical corporations, the universities and colleges of England, Scotland and Ireland; the London and provincial clinical hospitals; the medical education of women; postgraduate study; tropical medicine; preventive medicine; degrees for practitioners; dental surgery, and the public service.

The Lancet, London.

September 1.

2 Educational number.

The Practitioner, London.

September.

3 Angina Pectoris. C. A. Gibson.
4 *An Improved Method of Putting up Fractured Clavicles. T. D. Manning.
5 Diagnosis of Abdominal Tumors in Relation to Pregnancy. W. E. Fothergill.
6 *Asphyxia Neonatorum; Its Causes and Treatment. J. S. Sheill.
7 Use of Rubber Gloves in Abdominal Operations. F. E. Taylor.
8 Case of Infantilism. W. B. Ransom.
9 Recent Progress in Otology. R. Lake.
10 Estimation of the Functional Value of the Kidneys. J. W. T. Walker.
11 History of a Diphtheria Outbreak (Complicated with Vincent's Angina) at the Lambeth Parochial Schools, West Norwood, May to July, 1905. J. Priestley.

4. Improved Method of Putting Up Fractured Clavicles.—This apparatus has three parts: a shoulder-piece—practically half of a short waistcoat—an elbow piece, and webbing to draw back the upper arm. All are interchangeable. The first two are made of jean, and the webbing is similar to that used for babies' binders. First the shoulder-piece is fitted on the uninjured side, taking care that the loop to support the hand comes in front; a pad is then placed in the axilla, and the arm-piece is tied on round the arm as close up to the axilla as possible, the two free tapes at the end being loosely tied to the lower two tapes on the back of the shoulder-piece; lastly, the elbow-piece is put on, the two tapes behind being tied to the upper two on the back of the shoulder-piece, while in front, the arm having been placed in the usual completely flexed position, with the hand well up on the whole shoulder, the loop is buttoned over the wrist, the upper tape is passed through the small loop opposite to it on the elbow-piece, and tied to the uppermost one on the shoulder-piece; the adjustment of the last two pairs of tapes is obvious. The arm on the injured side is fixed in good position and all that now remains is to tighten up the tapes. The appliance is clean; there is no risk of dermatitis; it is a great economy of time for the surgeon, for the retying of a tape or two is much more quickly done than the application of much strapping, and also, if the patient lives at a distance, any intelligent attendant can soon learn to adjust any tapes which may work loose.

6. Treatment of Asphyxia Neonatorum.—Sheill describes his method of treating a typical case of asphyxia as follows: The child born, its cord is ligated and cut, and its legs wiped dry. Suspended by its legs, the mucus or other matter is removed from its air passages by means of damp cloths and by the mucus evacuator devised by him for that purpose. Next, the child is rapidly transferred to a large bath containing four inches of water at about 110 F. Into this it is placed supine, a rolled towel beneath its shoulders as in Sylvester's original description, so that only its head and face are above water; a small clip forceps is placed on its tongue and allowed to hang to one side, using the angle of the child's mouth as a fulcrum to draw the tongue forward and to keep it there. Counter-traction is made by the nurse or other assistant on the infant's feet, while the operator performs the typical Sylvester method of artificial respiration. Meanwhile the following solution is injected subcutaneously over the deltoid muscle:

Standardized tincture of belladonna...	gr. i	066
Strychnin	gr. 1/100	00066
Whisky	m. x	66

This injection usually gives a noticeably beneficial result in about three and a half minutes, and the dose may be repeated in fifteen minutes, if required. Now an ordinary enema syringe is dropped into the bath and about two ounces of the bath water is gently injected into the child's rectum. At intervals the infant is lifted out of the water and, while suspended by the feet, its spine is well rubbed with whisky or camphor liniment and the mucus evacuator used again. As the child is lifted from the bath, the temperature of which is maintained at the original height, and suspended as before, it may at intervals be slapped, rubbed and blown on with the breath, especially the latter in the face, which tends to stimulate reflexly the respirations. A little later a splash of cold water down the spine, or more effective still, in the face, will probably produce a gasp. Now Sylvester's method, unlike Schultze's, can be timed to act with the respiratory effort of the rescued child; when it gasps like a dying trout, as it is an inspiratory effort, draw up the arms quickly, and if it cries, however freely, compress the thorax to assist its extirpation. Do not use the cold bath, even for a moment, until well into the livid state with a strongly beating heart, otherwise a fatal collapse may result. Should the child, in spite of this combination of methods, fail to be resuscitated, the operator may at any rate feel assured that the best has been done for it.

The Dublin Journal of Medical Science.

August.

12 Clinical Report of the Rotunda Hospital. E. H. Tweedy.
13 Pygmies in Sickness and in Health. W. P. Cockle.
14 Stokes-Adams Syndrome. T. H. Peyton.

The Australasian Medical Gazette, Sydney.

July 20.

15 Epidemiology of Plague. (To be continued.) J. A. Thompson.
16 Desirability of Amending the Medical Acts. A. A. Lendon.
17 Three Cases of Primary Sarcomata of the Stomach. A. MacCormick and D. A. Welsh.
18 Case of Syncopal Bradycardia. J. M. Gill.
19 General Principles of Therapeutic Inoculation with Special Reference to Tuberculin. A. E. Mills.
20 Case of Spontaneous Disappearance of a Tumor (Probably Fibromyoma) during the later Months of Pregnancy. A. N. McArthur.
21 Observations on the Microbiology of Syphilis. W. J. Munro.

Revue de Gynécologie, Paris.

Last indexed, page 892.

22 (X, No. 3.) *Pozzi Livre d'or—(souvenir volume.) Une hystérectomie abdominale en 1906. J. L. Faure.
23 *Stérilité. A. Pinard.
24 De l'hystérectomie abdominale totale et subtotale. J. Bœckel (Strasburg), 75 cases.
25 *Souvenirs gynécologiques. A. Reverdin (Geneva).
26 *La méthode oxygénée en gynécclogie. J. Thiriar (Brussels).
27 Le mécanisme de l'inversion utérine. H. Treub (Amsterdam).
28 Cas d'inversion utérine non puerperale. Mendes de Léon (Ib.)
29 Recherches expérimentales sur l'entrée de l'air dans les veines du bassin. A. Poncet and X. Delore (Lyons).
30 *L'opération transpéritonéale dans le traitement des fistules vésico-utéro-vaginales. E. Forgue.
31 Sur la myomectomie abdominale. A. Monprofit (Angers).
32 Une statistique de laparotomies pour affections utéro-annexielles en 1905. A. Martin (Rouen).
33 *Traitement chirurgical des grossesses extra-utérines avancées avec mort de fetus (advanced tubal pregnancies, 5 cases). H. Barnsby (Tours).
34 *Des rétentions rénales à la suite de l'hystérectomie vaginale. F. Legueu (Paris).
35 Du diagnostic de l'appendicite et de quelques cas de para-appendicites gynécologiques. P. Thiéry (Ib.)

22. **The Pozzi "Livre d'or."**—The souvenir volume presented to Prof. S. Pozzi on the completion of 20 years of teaching at the Hôpital Broca, is said to mark an epoch in the history of gynecology in France. Pozzi's service was the first in France to assert the independence of gynecology and, in order to show the present standing of the science, Faure describes with minute detail an ordinary abdominal hysterectomy as done to-day in a well-equipped operating-room. The present record is that 95 per cent. of the patients are cured by the intervention, and he thinks we have reached the limit of perfection in our technic. The surgeons of A. D. 2000 will not perform an abdominal hysterectomy any better, he declares, than it is done to-day, although by means of discoveries beyond our ken at present they will not have to perform the operation so frequently as we do. All the articles in this number of the *Revue* are taken from the Pozzi souvenir volume.

23. **Sterility.**—The subtitle of Pinard's article is "What the physician should know and do to be able to treat sterility." He remarks that the percentage of families without children is about the same in various countries, 11.3 per cent. at Paris and 12.8 per cent. at Berlin, for example. The cause of the sterility is in the wife in about 60 per cent., and in the husband in about 40 per cent. Sterility in the female due to congenital external anteflexion is best treated by dilatation with the catheter, repeated two or three times after each menstrual period, and this treatment kept up for months. Pinard has known conception to occur after 9 and 12 months of this treatment. It not only restores the uterus to place, but overcomes the stenosis both of the external and internal os at the same time. In case of non-painful but scanty and irregular menses, after long regularity, he has restored conditions to normal with consecutive pregnancy in hundreds of cases by the simple restriction of the diet to milk alone for a month or so. In case the menses have stopped, with a uterus rather above medium size, the trouble is due to a premature menopause, beyond remedy. When examining the husband, he must never be told that the absence of spermatozoa is permanent. Pinard knows of three men who committed suicide on being told this. Iodid treatment has given good results in some cases of gonorrhea or syphilitic orchitis. In case of impotence, hygiene alone should be applied, but, with malformation of the genital organs, the semen fertile, artificial fecundation may be indicated.

25. **Gynecologic Souvenirs.**—Reverdin writes from his "anecdotage" an interesting sketch of the rise and development of gynecology in France, and of various national and international gatherings of specialists. He particularly comments on the greater confidence and liability of better results when a surgeon is operating in his accustomed environment. An invitation to operate when visiting a clinic away from home should not induce a surgeon to perform an operation, involving risk of life, merely because his vanity has been flattered by the invitation and the deference shown him. He advances this merely as his opinion, but confesses that it is based on several unfortunate personal occurrences. The great benefits of visiting others' clinics and operating-rooms he amply extols, saying that this intercourse with other minds and technics is one of the chief advantages of congresses, and that he does not agree with Mme. de Staël's dictum: "When men are congregated together their ears lengthen out."

26. **Oxygen in Gynecology.**—Thiriar has been experimenting with oxygen in gynecologic affections for a dozen years, and published his first results in 1899. His experience since has confirmed his first assertions and he now proclaims his belief that oxygen is the natural remedy for infection with anaërobes, especially gaseous septicemia, and is the antiseptic of the day. It is also the best means, he says, for preventing and curing septic complications in gynecology, and for treatment of all gynecologic infections. After the vagina has been rinsed he introduces an ordinary vaginal cannula connected by a rubber tube with the tank of oxygen. The cannula is held in place with a T bandage, and with a pad of cotton applied outside. The oxygen is then turned on and is allowed to flow for several hours without further attention. When the cannula is withdrawn a large pad of cotton is applied with a T bandage. The oxygen may be used thus the day before an operation, and resumed a few hours afterward. The oxygen penetrates into every crevice in the vagina and escapes through the cotton pad. Bacteriologic examinations before and after show the efficient bactericidal action of the protracted application of the gas. Preventive, preoperative asepsis of the vagina is easy and certainly obtained by this "méthode oxygénée" as he calls it. In case of an adherent pyosalpinx with contamination of the small pelvis with very virulent pus, after the toilet of the cavity, he introduces two long tubes, with an opening at the tip, sometimes interposing a wick of iodoform

gauze. One of these tubes is connected with the tank of oxygen, the other acts as a siphon, its outer end being in a vessel containing an antiseptic solution. The abdomen is closed as usual, and the oxygen turned on; the bubbles rising in the fluid in the vessel show the force of the current. The outflow of the oxygen sweeps along all the secretions which otherwise might accumulate and serve as nests for bacteria. The secretions are sometimes so abundant that the fluid has to be renewed several times during the day. Since this oxygen treatment has been in constant use, there has not been a single instance of infection of the peritoneum, even when it had been soiled. A number of instructive cases are related, among them that of a woman of 42 with rupture of the uterus during childbirth. The omentum protruded from the vagina, the pulse was thready, 120, respirations 32, temperature 36.6 C. The entire peritoneal cavity was found soiled with meconium, etc., and a fibrinoplastic exudation already coated the intestines. The uterus was torn for 10 cm. and the vagina for 5. After abdominal hysterectomy and the toilet of the region the oxygen and siphon tubes were introduced as far as the pouch of Douglas and the abdomen closed. The oxygen was turned on, the force sending up a bubble at a time, and this was continued for five days. The pulse and respiration soon returned to normal and the temperature never rose above 38 C. The patient was dismissed completely cured in three weeks. The oxygen undoubtedly, Thiriar states, prevents formation of adhesions and restores normal conditions in the parts. When the oxygen is used in an established peritoneal infection, he passes the jet of oxygen over the parts in the same way that furniture is cleaned with compressed air. It breaks up and removes fibrinous deposits, before the continuous flow and siphon are arranged. Several separate tubes and siphons might be used to advantage, he declares, in some cases. In tuberculous peritonitis he evacuates the ascites through a buttonhole incision, and sends a stream of oxygen into the cavity for ten minutes. He then closes the abdomen and awaits with confidence the cure which is certain, he says, to occur in a few days. In infectious gynecologic conditions, metritis, etc., he uses a two-way sound with a gentle flow of oxygen, kept up for two or three days. Even if a little oxygen should get into the circulation this is not so dangerous, he thinks, as some observers have insisted. He has never witnessed any untoward effects from the oxygen method. One patient with hemorrhagic metritis succumbed just as the arrangements were completed, but before the current had been turned on. Reverdin in the preceding article also reports excellent results from the oxygen treatment, without by-effects. [Costa, in Italy, used the oxygen intermittently, as he reported last year, without any satisfactory results.—ED.]

30. **Transperitoneal Operation for Vesicovaginal Fistula.**—Forgue's 5 illustrations show the various phases of the operation which he successfully performed in a case of extensive laceration of the bladder, vagina and cervix in a x-para of 43.

33. **Treatment of Extrauterine Pregnancy Near Term.**—Barnsby's experiences with 5 cases compel him to advocate marsupialization with patient waiting for expulsion of the placenta in all cases of extrauterine pregnancy, with the fetus dead, within 2 months of term. Total extirpation should be reserved for the rare cases of tubal pregnancy in which there are no adhesions between the fetal sac and the adjacent organs. Marsupialization and expectancy, he states, eliminate the danger of hemorrhage, and reduce the chances for infection. The whole intervention is thus extraperitoneal, and the prognosis is good; these advantages, he declares, outweigh the drawbacks of the incomplete operation. In draining, a T tube introduced into the cul-de-sac of Douglas insures the drainage of the lower part of the sac.

34. **Renal Retention of Urine After Vaginal Hysterectomy.**—Legueu has observed 4 cases of this kind, the hypertension of the kidney and the infection occurring apart from any accidental injury of the ureters, that is, without these structures having been clamped.

Semaine Médicale, Paris.

36 (XXVI, No. 34.) *Le présent et l'avenir de la médecine européenne en Chine. L. Legrand.
37 (No. 35.) *La polycythémie splénomégalique. L. Cheinisse.

36. **Prospects of Western Medicine in China.**—Legrand, physician to the Imperial Railroad Company in China, here gives an interesting sketch of the Chinese character in relation to modern medicine. The Chinese do not fear death; they do not think of it; their attitude is constantly heroic before the inevitable. Their sensibilities are not so keen, the capacity of suffering and enjoying is less, they are lazy in body and mind, and penurious, while they are imbued with a sense of the instability of human goods, owing to injustice, revolutions, etc., and they have a profound and atavistic disbelief in a personal future life. Their ideal of earthly happiness is to lie and dream away the hours, and the idea of perpetual rest in the grave is not repelling. The native physicians have a comparatively low position and generally have some other means of support. As absolutely nothing is free in China, not even the food in the prisons, they can not conceive why a physician or surgeon gives free consultations, and they attribute to him every motive but the right one. The medical missionaries in China are looked down on, Legrand adds, and their motives misunderstood for this reason. The Chinese say: "What crime has this foreigner committed that he should be banished from his country and have to come here to tend the sores of the coolies who ridicule him when he has finished? He must be very ignorant and awkward to be reduced to tending the dregs of the people and not even to demand the few pennies that the poorest Chinese doctors would ask for such services." Some of the applicants at his clinic come to steal, others merely to beg, and others just to ridicule the foreigner among themselves. Even if Chinese students become thoroughly trained in medicine, it can be only in the science; they will lack the imaginative, constructive and synthetic faculties which make of the science an art. China will absorb all that can be learned from the Occident in respect to locomotives and cannon, and everything else that will enable it to defend better its traditional civilization against the outside world. Unless there is a complete regeneration, however, both in character and ideas, western medicine will have little chance to spread in China or to take a dignified and remunerative position there. The Chinese have a saying, dating from eleven centuries before our era, that "no one can be called a physician who does not cure six out of every ten patients, for, if only five recover, the patient is as well off without him, as half of all the sick get well without aid."

37. **Polycythemia with Enlarged Spleen.**—Cheinisse analyzes the various communications that have been published on this subject, and draws the clinical picture of the disease much as presented in an editorial in these columns recently (page 510). He remarks in conclusion that, on account of the lack of any specific medication or measures, splenectomy might be justifiable, as advocated by Vaquez and Laubry. Quinin gave encouraging results in Begg and Bullmore's and in Zimlick's cases, and arsenic in Türk's case and in others.

Berliner klinische Wochenschrift.

38 (XLIII, Nos. 25-26.) Das Pathologische Institut zu Berlin. J. Orth.
39 Zur Kenntnis der Meningitis serosa spinalis. F. Krause. Successful operation.
40 Changes in Concentration of Urine and Blood Under Influence of Mineral Waters.—Ueber Konzentrationsveränderungen des Harnes und des Blutes nebst Darreichung verschiedener Mineralwässer. J. v Szaboly.
41 Inhalation frei zerstäubter Flüssigkeit bei der Behandlung des chronischen Bronchial-Katarrhs. Stemmler.
42 Carbonated Baths and Reaction of Circulatory Apparatus.—Wie reagirt der normale Zirkulationsapparat auf natürliche Kohlensäurebäder? F. Kisch, Jr.
43 Physiologische Versuche mit Moorbädern (mud baths). O. Tuszkai (Marienbad).
44 Die Stellung der Dermatologie in der Medizin. E. Lesser.
45 *Der therapeutische und symptomatische Wert der Lumbal-Punktion bei der tuberkulösen Meningitis der Kinder. E. Schlesinger (Strasburg).
46 *Two Cases of Tumors Compressing Spinal Cord Successfully Removed.—Ueber Fälle von erfolgreich operierter Rückenmarkshautgeschwulst. H. Oppenheim and M. Borchardt.
47 *Leukemia Without Leukemic Blood?—Leukämie ohne leukämisches Blut. C. A. Ewald.
48 Das Heufieber und seine Serumbehandlung (hay fever). Kammann.
49 *Die Gonorrhoe-Behandlung mit Stauungs-Hyperämie. S. Jacoby (Berlin).
50 *Zur Diagnose des Magencarcinoms (gastric cancer). L. Kuttner (Ewald's clinic, Berlin).

45. **Lumbar Puncture in Tuberculous Meningitis.**—Schlesinger has found that by repeated lumbar puncture it is possible to prevent the appearance of convulsions in tuberculous meningitis. A single puncture may be sufficient in some cases, even in the moribund. He advises it as early as possible, and allows as much cerebrospinal fluid to escape as flows spontaneously. When tubercle bacilli of comparatively attenuated virulence are found in the cerebrospinal fluid, the outcome may possibly prove favorable; 5 cases have been published in which recovery occurred, although tubercle bacilli were found in the cerebrospinal fluid. None of his patients recovered, but he has been much impressed with the prompt benefit that followed lumbar puncture.

46. **Three Cases of Tumors Compressing the Spinal Cord.**—Borchardt has had the good fortune to operate in 3 cases of tumors compressing the spinal cord with a successful outcome in each. The findings are illustrated. The symptoms in the first case were atrophic paresis of a segmentary character in the left arm with corresponding anesthesia and the symptom-complex of the Brown-Séquard hemiplegia. The patient was a woman of 33, who complained of pains between the shoulder blades and in the left shoulder for four or five months, with weakness of the left arm and stiffness in the left leg. By the end of the ninth month the contracture and paralysis had increased to complete helplessness. The assumed benign tumor was found, as diagnosed, at the sixth and seventh cervical vertebræ. The results were the gradual subsidence of the symptoms of compression. In the second case the symptoms were more complicated and indicated considerable compression of the spinal cord at the fourth and fifth dorsal vertebræ. The first symptoms had been pains in the legs, abdomen and back, weakness in the right leg, disturbances in micturition, impotence, and paresis. The tumor in this case was soft and extended vertically for 5 cm. with a small projection to the left. The symptoms have gradually subsided to some extent since the recent removal of the tumor, and the patient is now able to walk, although still with a gait suggesting ataxia. The other disturbances have righted themselves. The tumor was exactly in the median line, which accounted for the unusual character of the symptoms. Oppenheim gives an illustration of five tumors removed from the living subject on his diagnosis, and mentions three others which are not represented in the picture. Borchardt operated by laminectomy at a single sitting, and reviews various details and general features of operations affecting the spinal cord, especially the danger of secondary infections. In the first case the operation was followed by obstinate bronchitis, incontinence both of urine and stools, catarrhal cystitis for three weeks, decubitus and severe lancinating pains in the legs, but these gradually subsided and the patient is now so well that she can walk for hours and has entire charge of the housekeeping and garden. She is the wife of a workingman, and refused to consent to the operation for five months after the diagnosis had been made. Convalescence in the second case was disturbed by intensely severe pains in the penis, buttocks, and legs, requiring large doses of morphin, but they subsided spontaneously after a few days. In a third case the tumor was found as diagnosed at the sixth dorsal vertebra and its removal was very tedious, but the incision, 25 cm. long, healed completely by the seventeenth day.

47. **Anatomic Leukemia Without Leukemic Blood.**—Ewald describes a case with autopsy in which the symptoms indicated acute myeloid leukemia running a fatal course in about seven weeks. The patient was a robust man of 37. The autopsy disclosed hyperplasia of the spleen, lymphomatous infiltration of the liver and kidneys, "raspberry jelly" bone marrow, hemorrhages in kidneys and stomach, fatty degeneration of heart with enlargement and pericarditis with adhesion. The microscopic findings also were those of leukemia. At the same time the blood did not present any of the characteristics of leukemia and there were no pains in the bones and no enlargement of the peripheral glands. The lack of the latter and the negative blood findings, as well as the rapidly fatal course of the disease, spoke against splenic anemia, and nothing was found to indicate a septic process.

49. **Passive Congestion Treatment of Gonorrhea.**—Jacoby has been impressed with the favorable influence exerted on gonorrheal processes by the application of an apparatus for suction therapy according to the Bier-Klapp technic. A sound is used that fits into the anterior urethra air-tight and is connected with a rubber bulb. The sound is made with three long, deep grooves, with five comparatively large openings in each groove. In order to bring all parts of the mucosa under the influence of the suction, the sound is turned the second time at right angles to its position at the first sitting. He leaves it in the urethra for from 10 to 15 minutes.

50. **Diagnosis of Gastric Cancer.**—Among the various diagnostic points emphasized in this review is the sudden beginning of the symptoms calling attention to the stomach, in persons previously free from digestive disturbances. In Kuttner's experience the symptoms were generally referred to some error in diet, and the pains and vomiting were assumed at first to be acute and then chronic dyspepsia. In three instances the first symptom was profuse hemorrhage in the stomach. In some cases, however, the affection developed insidiously with merely vague dyspeptic disturbances. He does not believe that there is much danger of the development of cancer on the basis of chronic gastric catarrh. He has encountered only four in his hundreds of cancer cases in which there were evidences of preceding atrophy of the stomach. The second important sign, after the abrupt onset, is the progressive decline of the appetite. Complete anorexia, sometimes actual repugnance for food, especially for meat, is an important and sometimes a very early symptom of cancer. With ulcer the appetite is generally good, and the retention of a good appetite to the last may be exceptionally observed even with cancer. His experience has been that gastric cancer is not restricted to middle age, but is liable to occur earlier, and is frequently incorrectly diagnosed in the young. A history of cancer in the family, especially gastric cancer, or of preceding ulcer or of trauma, affecting the stomach, should be regarded as predisposing factors. Sometimes the patients are unusually pale, probably from occult bleeding, and sometimes there may be loss of weight and strength, but this is not inevitable. He had three patients, working men, who were able to keep at their work until the very last stage of malignant disease. Obstinate itching of the skin has been observed frequently in case of gastric cancer, and he regards it as an important sign, as also putrid smelling eructations accompanying dyspeptic disturbances. It is important, he states, to smell of the stomach tube in dubious cases. A particle of extremely putrid matter may give the clue to an ulcerating cancer. Pain is not characteristic and of not much differential value. The finding of "coffee grounds" in vomit is suspicious. Deficient production of gastric juice has no differential value, but the constant finding of lactic acid justifies the assumption of cancer, although it is not an early sign. He agrees with Glässner that in case of reduction equally in both the lab ferment and pepsin, the tumor may be in the fundus, while if the lab is in approximately normal amounts while the pepsin is reduced, a tumor in the pyloric region may be suspected. Rare instances are known in which the motor function has remained approximately normal nearly to the end. In testing the motor function it is necessary that the conditions should be identical at each test, and it is important that an abundant meal should have been ingested the evening before examination of the fasting stomach. If even minute amounts of blood with pus or the latter alone or with mucus are found in the fasting stomach, the assumption of cancer is almost certain. Blood alone is not so significant, although the constant finding of occult blood has great differential value, especially in cases without retention of stomach contents and with deficient gastric juice. When the gastric juice secretion is normal and there is stagnation, the occult blood findings are unable to decide the question as to ulcer or cancer. The constant absence of blood in stomach content and stools is good presumptive evidence against cancer. Albuminuria was rare in Kuttner's cases of gastric cancer, but the urine generally contained large amounts of indican and of Rosenbach's pigment. The repeated finding of albumosuria and a positive diazo reaction, under some cir-

cumstances, suggest cancer. Another sign is the discovery of amebæ and flagellates in the mucus of the fasting stomach, and also the presence of albumin in the fluid in the fasting stomach according to Salomon's method. Kuttner's extensive experience has confirmed the diagnostic value of this albumin test. Salomon gives fluid food, free from albumin, at noon. In the evening he rinses the stomach clean. The next morning the stomach is rinsed out several times with 400 c.c. of physiologic salt solution, and the albumin content of the rinsing fluid is determined. When the fluid turns flaky at once under the Esbach test or if the Kjeldahl test shows more than from 20 to 25 mg. of nitrogen in 100 c.c. of rinsing water, the suspicion of cancer is justified. It is possible for albumin to be eliminated in the stomach in simple gastritis, but this must be very rare, as Kuttner, Salomon and others have never encountered a case in which much albumin was found in the stomach content. Another sign of cancer is pleuritis on the left side. Kuttner has repeatedly found this pleuritis accompanying cancer in the lesser curvature. Visual inspection of the interior of the stomach and study of the blood are less promising than Roentgen examination. The presence of a cancer is liable to induce abnormal peristalsis, and also to cause the stomach outline to be abnormal at some point or points. The shadow cast by the stomach content also shows extraordinary recesses and projections. In regard to operability, it must be remembered that a small carcinoma may prove to be fully as malignant, if not more so, than the large ones.

Centralblatt f. d. Grenzgebiete d. Med. u. Chir., Jena.

Last indexed, page 241.

51 (IX, No. 11.) *Die Therapie der Larynx-Tuberkulose. R. Imhofer. Review of the literature. (Commenced in No. 6.)
52 (Nos. 15-16.) *Weitere Ergebnisse der Roentgen-Behandlung bei Leukämie und Pseudoleukämie. K. H. Schirmer. Review of the literature.

51. **Treatment of Laryngeal Tuberculosis.**—Imhofer analyzes 253 articles published on the subject of laryngeal tuberculosis between 1900 and 1905. His conclusions are to the effect that at present we are as far removed from the resigned nihilism of former days as from an absolutely certain successful treatment. The first question is to decide whether or not curative or only palliative measures are required for the case in hand. This is decided by the general condition and the state of the lungs. The next step is to apply general treatment, and in this the environment of the patient is of extreme importance. The selection of the proper local treatment for the individual case is also a problem. It may be necessary to vary the caustic and also its mode of application to conform to the individual reaction. It is wise also to interpose occasionally a few days of rest with merely a local anesthetic. It is of the greatest importance after curettement to wait until the operative wound has entirely healed and the success of the intervention is determined before attempting to repeat it. A brief trip to the country sometimes has an excellent effect in the interim. Palliative treatment should be restricted to the minimum necessary to relieve the subjective disturbances.

52. **Roentgen Treatment of Leukemia.**—Schirmer has found 109 articles published in the last two years on the treatment of leukemia and pseudoleukemia with the Roentgen rays. Most of the writers used fractional doses and numerous sittings, but the Vienna school advocates a single complete sitting. Holzknecht of Vienna has had the most extensive experience with Roentgen treatment of leukemia, but he has not yet published his report. It seems to be the general opinion that in Roentgen treatment we possess a generally promptly efficient means to improve materially even severe cases of mixed-cell leukemia. Recurrences are generally amenable to the same treatment, but it seems natural to suppose that as the disease progresses it will prove more refractory to the rays. Schütze has reported a unique case in which there was no recurrence for three and a half years after the exposures. The results are less constant in lymphatic leukemia; 7 cases in which it proved successful are balanced by 3 in which no benefit was derived. It is certainly worth a trial, although it must not be forgotten that remissions are not infrequent in lymphatic leukemia. Besides the true remissions there are also pseudo-remissions induced by lytic processes affecting the atypical, immature forms of leucocytes. In pseudo-leukemia and in Hodgkin's and Banti's diseases, favorable results have been reported by various writers in 11 cases of pseudo-leukemia and in 4 of Hodgkin's disease. Liebermeister reports that a woman of 60 reacted to the exposure with weak heart action; the glands in the neck became still larger and death soon followed. Krause observed ulceration in the neck after exposures in a case of pseudo-leukemia. Quadrone reports that pleuritis with effusion developed in 2 patients with lymphatic pseudoleukemia after Roentgen treatment. In 2 cases of symmetrical enlargement of the parotid gland, the swelling subsided under the rays, although recurrence was soon observed in one case. No results were apparent in Krause's 3 cases of splenic anemia and 2 of enlargement of the spleen of unknown origin. Bozzolo insists on the favorable action of the rays in Banti's disease, and recently they have been applied in treatment of lymphomata of tuberculous nature. The theoretical views in regard to the action of the rays are conflicting. When the results are negative in case of lymphatic leukemia and pseudo-leukemia, the reason may be an unusually rapid regeneration of the blood cells.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

53 (XXXII. No. 32.) *Ueber Lysol-Vergiftung (poisoning). F. Blumenthal.
54 Einige seltene Nachkrankheiten im Verlauf des Typhus abdominalis (rare after-affections). M. Pfister.
55 Appendicitis Equally Frequent in Women and Men.—Die Blinddarmentzündung bei Männern oder bei Frauen häufiger? Karrenstein.
56 Alkalized Buttermilk in Infant Feeding.—Weitere Mitteilung ueber die Verwendung der alkalisierten Buttermilch als Säuglingsnahrung und ueber die Dauerpräparate der alkalisierten Buttermilch. L. Moll.
57 *Retention of Anterior Wall of Frontal Sinus in Operative Treatment of this Sinusitis.—Eine neue Methode zur Erhaltung der vorderen Stirnhöhlenwand bei Radikaloperationen chronischer Stirnöhleneiterungen. G. Ritter.
58 Die Anzeigen zur Radikal-Operation der Prostatiker. B. Goldberg.
59 (No. 33.) Resultate der Frühoperation bei Appendicitis (early operation). H. Kümmell.
60 *Experimentelle Untersuchungen ueber die Magensaft-Secretion beim Menschen (secretion of gastric juice in man). A. Bickel.
61 *Ueber chronische Dysenterie und ihre Behandlung. H. Meyer.
62 Ueber Malachitgrün-Nährböden zum Nachweis von Typhus- und Paratyphus-Bacillen (nutrient media). J. Leuchs.
63 *Beitrag zur Behandlung Basedowscher Krankheit mit Röntgen-Strahlen. J. Sklodowski.

53. **Lysol Poisoning.**—Blumenthal mentions that about 100 cases of lysol poisoning come under treatment in Berlin every year. Even when the stomach is not rinsed out for two or three hours afterward, it is yet possible to evacuate a large proportion of the lysol. His postmortem findings and chemical studies have demonstrated that lysol is not a poison for the blood, but acts mostly on the cell, especially on the liver cells. The stomach should be rinsed until there is no longer trace of lysol. It has been found sometimes that even after all trace of the lysol has disappeared, further rinsing a couple of hours later will show more lysol, probably due to elimination into the stomach with consecutive reabsorption in the intestines unless removed by rinsing the stomach. No antidote is known to date, he states, but if the patient survives the first twenty-four hours he is liable to recover and to be free from serious after-effects. Blumenthal believes that an antitoxin is formed to protect against the lysol, and that glycuronic acid —which is excreted in large amounts—represents the antitoxin, or at least has some share in the neutralizing process. The lysol has an affinity for fat, and consequently penetrates into the cell through the lipoid substance. The cell then reacts to this invasion by producing sulphates and glycuronic acid out of its own supply of albumin and carbohydrates. They are produced in excess and act on the intruding poison like a true antitoxin, although, unlike the true Ehrlich antitoxins, they do not pass into the blood to any extent.

57. **To Retain Anterior Wall of Sinus in Frontal Sinusitis.**—Ritter opens up the frontal sinus through the wall of the orbit and bores a passage slanting from the highest point downward into the sinus, which allows curettement and drainage with a long strip of gauze.

60. **Secretion of Gastric Juice.**—Bickel's research has demonstrated beyond question that the most various stimuli affecting the organs of taste or smell are capable of inducing a secretion of gastric juice when the stomach mucosa is resting

or of increasing an already existing secretion This same effect follows stimulation of taste or smell whether the sensations are agreeable or disagreeable The quality of the gastric juice secreted seems to be constantly about the same in man, but the quantity secreted varies widely at different times and with different stimuli His experiments were made on a young woman with a fistula into the stomach, after esophagotomy. The findings speak most decidedly, he thinks, against the assumption of "hyperchlorhydria" as an increase in the proportion of acid He assumes that the gastric juice represents about a constant substance, and that the symptoms attributed to hyperchlorhydria are in reality the effect of the quantity of the secretion and of motor phenomena, instead of any change in the composition of the gastric juice.

61 **Treatment of Chronic Dysentery.**—The 3 cases of chronic dysentery described by Meyer came under treatment in Dresden and suggest the importance of examining for amebæ even when there is no history of a residence in the tropics. They also suggest the advisability of tentative treatment with ipecac and iodoform enemas even when amebæ are not found at first in the stools, after exclusion of intestinal tuberculosis, gastric or pancreatic achylia, fermentative dyspepsia or other cause for chronic diarrhea He was much gratified with the results of treatment with ipecac given with a few drops of opium and peppermint, supplemented by high rectal injections of about 250 c c of a solution of 5 gm. iodoform in 1,000 gm. of mucilage of gum arabic, given in the knee-elbow position under high pressure, with an attempt afterward to massage it up into the colon The iodoform is left in the intestines for about ten minutes and the larger part is then washed out with two enemas of water. If the amebæ are ensconced in the appendix it may be necessary to remove that structure before the affection can be cured

63 **Roentgen Treatment of Exophthalmic Goiter.**—Sklodowski reports a case of exophthalmic goiter in a girl of 15 of six months' duration Roentgen treatment was applied, half of the thyroid gland being exposed at a distance of 20 cm. for ten minutes at a time The improvement after less than a month of this treatment was striking. The girl gained over 13 kilos in weight in 16 weeks and the sweats and nervous condition were improved although the other symptoms persist.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed, page 79

64 (LXIII No 6) *Die Kinder Tetanie (Spasmophilie) als Calcium Vergiftung (intoxication) W. Stoeltzner
65 *Antitoxin und Eiweiss (albumin). P. H Romer and H Much
66 Die Ernährung mit "Holländischer Säuglingsnahrung" ein Butter Milch Gemisch Dauerpraparat (Buttermilk that will keep). H Koeppe
67 Studies in Regard to Buttermilk in Infant Feeding—Einleitende Bemerkungen F Selter (Solingen)—Macht Buttermilch Rachitis? M Cantrowitz—Ist Mehlzusatz zur Buttermilch notwendig? Id—Ueber die Indikationen der Buttermilch Ernährung C Brehmer—Ueber die Storungen bei der Buttermilchernährung Id—Ueber Säuglingsernährung mit gesäuerter Vollmilch W. Nebel
68 (LXIV No 1) *Ueber Lymphozytose der Cerebrospinalflussigkeit bei kongenitaler Syphilis und ihre diagnostische Bedeutung L Tobler
69 Ueber 2 atypische Myxodem Falle Bernheim Karrer (Zurich).
70 Intermittent Fever in Pneumonia—Zur Kenntnis der Lungenentzundung mit intermittierendem Fieberverlauf. F v Szontagh
71 *Family Cases of Scarlet Fever Nephritis—Zur familiären Haufung der Scharlach-Nephritis F. Spieler
72 Ein Beitrag zur Erläuterung diverser Fragen aus dem Gebiete der Diphtherie Serum Therapie E J. Gindes

64 **Tendency to Tetany Due to Lime in Infants' Food.**—Stoeltzner has been continuing Finkelstein's research on the constituents of cow's milk to find which is responsible for what he calls "spasmophilia." He thinks that the phenomena observed incriminate the lime in cow's milk as the cause of the tendency to tetany. These conclusions, he states, harmonize with the results of recent physiologic research on the lime salts, such, for instance, as the fact that the presence of small amounts of calcium salts is indispensable for success in the experiments with the isolated still living heart. The pulsations of the heart cease unless the fluid pumped through it contains the appropriate calcium salts.

65 **Intestinal Absorption of Antitoxin**—Romer and Much relate recent research which confirms their previous assertions in regard to the permeability of the intestinal wall for antitoxin during the first few days after birth. This permeability grew less as the animals (calves) increased in size. Their experiments further showed that the intestinal absorption of albumin from horse serum, thus a heterologous albumin, proceeded in like manner. The absorption was much greater when the antitoxin was ingested in the milk of the immunized mother than when the milk was given from the bottle after addition of antitoxin in the form of antitoxic horse serum. The further fact was established that in cows treated with horse antitoxin the antitoxin was modified in some way so that as it passed into the milk it acquired the properties of cow antitoxin, and was absorbed in the digestive tract of the calf as perfectly as actual cow antitoxin.

68. **The Cerebrospinal Fluid in Congenital Syphilis.**—Tobler reports that in 14 cases of congenital syphilis pronounced lymphocytosis was evident in the cerebrospinal fluid in 12 of the infants. The findings were negative in one case and dubious in another. The proportion of albumin was abnormally high in 5 out of the 7 cases These characteristic findings in the cerebrospinal fluid were manifest at a period before any other symptoms suggested the positive presence of syphilis. The syphilitic affection of the parents was the only clue to syphilis in the child in some cases, but the characteristic findings in the spinal fluid were soon followed by other signs of the inherited disease. The brain and spinal cord in some of these children when examined later showed unmistakable evidences of an inflammatory meningitic process with effusion.

71. **Scarlet Fever Nephritis in Families.**—Spieler observed 14 instances in which 2 members of the same family had nephritis as a complication of scarlet fever, and 3 instances in which more than 2 members of the family were affected. His total experience includes 83 families, with 186 children with scarlet fever; of this number 35 families, with 83 children, presented 51 cases of nephritis. He thinks that in certain families an unmistakable predisposition to nephritis exists.

Munchener medizinische Wochenschrift.

73 (LIII, No 24) *Dietetic Treatment of Exophthalmic Goiter—Ernährungstherapie der Basedowschen Krankheit. K All (Uchtspringe).
74 Behavior of Typhoid Bacilli in Blood in Respect to Bactericidal Substances—Ueber das Verhalten der im Blute der Typhuskranken nachweisbaren Typhusbazillen gegenueber der bakteriziden Wirkung des Blutes Eppenstein and Korte
75 Action of Chalybeate Waters on Metabolism—Ueber die Wirkung der Stahlwasser auf den Stoffwechsel Vandeweyer and Wybauw.
76 Ueber Leukoderma bei Lues, bei Psoriasis und bei Ekzema Seborrhoicum Jesionek
77 Importance of Fat in Food of Nursing Women—Art und Menge des Fettes in der Nahrung stillender Frauen und die Wirkung seiner Entziehung auf das Milchfett Engel and Plaut
78 Prophylaktische Antisepsis Credé (Dresden).
79 Zur konservativen Behandlung der Nasennebenhohleneiterungen (sinusitis) Heermann
80 Suction Treatment of Sinusitis—Kritische Bemerkungen ueber die Sondermannsche Saugmethode bei Erkrankungen der Nasennebenhohlen W. Uffenorde.
81 Beitrag zu den congenitalen Ankylosen der Finger Gelenke H Hoffmeyer
82 *Rapid Test for Albumin in Urine—Eine Methode den Eiweissgehalt eines Harnes mit hinreichender Genauigkeit fur klinische Zwecke in einer Stunde zu bestimmen G Buchner (Munich)
83 (No 25) To Distinguish Streptococci—Beitrage zur Unterscheidung der Streptokokken E Baumann
84 *Auscultation of Spine, Sacrum and Pelvis—Die Auskultation der Wirbelsaule, des Kreuzbeins und des Beckens Ludloff
85 Ueber die Wendung bei Placenta Prævia (version). R Jolly
86 Surgical Notes from Japan—Kriegschirurgisches aus Japan A Treutlein
87 Zur Frage der Sauglingsernährung in Arbeiterkreisen (infant feeding in wage-earner circles). J. Spaether
88 *Ueber Behandlung mit Hetol bei Keratitis parenchymatosa (sodium cinnamate) P Cohn (Mannheim)
89 Ein neuer Apparat zur Vornahme von Sehprufungen (testing vision) A Beck
90 Fluid Media for Cultivation of Anaerobics—Die einfachste Methode der Anaerobenzuchtung in flussigem Nahrboden F. Reuschel
91 Zur Farbung der Spirochæte pallida (stain). R M Berger.
92 Value of Statistics for Question of Rapid Delivery in Eclampsia—Der Wert der Statistik fur die Frage der Schnell Entbindung bei der Eklampsie W Liepmann
93 To Reduce Possibility of Infection in Laparotomies—Das Theilhabersche Verfahren zur Verminderung der Infektionsmoglichkeit bei Operationen in der Bauchhohle L v Stubenrauch
94 Die Krankheit des Kaisers Sigmund (1400 1437). W Ebstein

73. **Dietetic Treatment of Exophthalmic Goiter.**—Alt asserts that a diet adapted to the special needs of the metabolism in exophthalmic goiter is capable of brilliantly successful results, as he has demonstrated by his own experience. Two years ago he reported extremely favorable results with dietetic treatment of myxedema, and his experience with exophthalmic goiter has been fully as remarkable. The internal oxidations are augmented in the latter, the metabolism accelerated, as in case of artificial hyperthyroidization. Some of the components of the general transformation and interchanges of matter are abnormally weak, and some are unusually strong. In the idiocy of myxedema it was found that the patients assimilated only a very small amount of the phosphorus ingested in their food. Under thyroid treatment their power of assimilating phosphorus increased, and administration of phosphorus combined with an albumin preparation gave excellent results. In 12 cases of exophthalmic goiter considerable insufficiency on the part of the kidneys was revealed by functional tests with salt. Most of the patients had more or less edema. By putting them on a diet free from salt a balance was finally established between the amount of salt ingested and that eliminated. The edema vanished and the heart action at once improved, the pulse rate approximated normal and the subjective disturbances subsided. Illustrations of patients "before and after" show the remarkable benefit derived in four instances, and similar illustrations of patients with myxedema confirm the advantages of scientific dietetic treatment. Alt declares that every sanitarium for nervous and mental affections should have a well-equipped laboratory for research on the metabolism as an indispensable adjunct. In his cases of exophthalmic goiter the demand for calories was strikingly high, two or three times the normal demands, or even more. Intestinal absorption was also good, even in the cases with unusually active peristalsis and three or five stools a day. One patient required 100 calories per kilo of body weight and thrived on them. In this and some other cases phosphorus was taken up in the intestines with unusual completeness and was eliminated in the urine in abnormally large amounts. This would soon have led to phosphorus starvation in the organism and deterioration of the bones if phosphorus had not been supplied from without in sufficient quantities. These observations on the augmented output of phosphorus in exophthalmic goiter throw light on the cases which have been reported by Latzko and others in which exophthalmic goiter became complicated with osteomalacia. The diet in the cases reported by Alt was distinguished by reduction of the amount of salt, not more than 4 gm. a day being allowed, the ingestion of fluids also being restricted; the amount of carbohydrates was also reduced in proportion to the low degree of tolerance, and the food was planned to supply large amounts of calories, in the form of albumin and fat, for which milk, cream, unsalted butter, rice, meat, eggs and fish were the main reliance, with milk first and always. On this diet the patients all gained in weight without the gain being due to retention of water, while all the symptoms of the disease subsided to a remarkable extent, with an unmistakable gain in the functional capacity of the previously insufficient organs. He mentions in conclusion that the exophthalmic goiter in his patients had been preceded by acute articular rheumatism, prolonged grippe or an intestinal affection with icterus, in nearly every instance. The particulars of some of the cases are given in detail with the daily dietary.

82. **Rapid Test for Albumin in Urine.**—Buchner gives an illustration of this simple outfit. It consists merely of two bottles, two test-tubes, the graduated test-tube for the albuminimeter, and a flat piece of cork with a hole in the center to serve as a standard for the albuminimeter. The test is based on the complete coagulation of the albumin in urine, first heated and then treated with nitric acid and a saturated solution of salt. The clear, filtered urine is poured into a test-tube to a mark representing 8 c.c. It is then heated to boiling, and two or three drops of nitric acid are added and 2 c.c. of a saturated solution of table salt. After being well shaken the contents of the tube are poured into the albuminimeter. After an hour's precipitation each c.c. of the deposit of albumin at the bottom of the tube corresponds to 1 per thousand of albumin in the urine. Comparative tests of this technic with Esbach and other tests showed remarkably concordant findings.

84. **Auscultation as an Aid in Diagnosis of Surgical Bone Affections.**—Ludloff expresses surprise that surgeons pay so little heed to the important findings possible with auscultation of the spine, sacrum and pelvis. Crepitation can often be heard and will reveal the cause of mysterious pains in certain cases. In one of the cases described, after fracture of the clavicle, the other complaints of the patient were ascribed to hysteria or simulation and received scant attention for eight years, during which the patient consulted various authorities. Finally auscultation revealed crepitation over the seventh cervical vertebra, and a bony prominence was discovered. A radiogram then disclosed that this vertebra had been fractured, evidently at the same time as the clavicle. In other cases elderly women complained of pains in the region of the sacrum. As palpation and inspection revealed nothing wrong, they were referred to a gynecologist, but he could find nothing to explain the pain, and radioscopy was equally fruitless. Examination with the stethoscope and phonendoscope revealed a distinct grinding and cracking, generally at the junction of the sacrum and vertebræ, the sounds resembling those heard at the knee in case of arthritis deformans. Auscultation of the entire spine then usually revealed a spot where these sounds were heard loudest. Examination of this spot by radioscopy then generally disclosed some small deposit on the joint, a focus of arthritis deformans in the spine. A lesion of this kind is liable to entail not only sacral pains, but lumbar and sacral neuralgia. When the focus is at the emerging point of the sciatic nerve it is liable to induce sciatica, and when it is in the back of the neck, occipital neuralgia is a frequent consequence. Electric treatment of these non-traumatic cases is of course useless, while the process heals under relief from pressure with massage and medico-mechanical measures. Auscultation is even more instructive, he states, in the traumatic cases.

88. **Treatment of Parenchymatous Keratitis.**—Cohn reports 2 cases cured by instillation of 1 per cent. sodium cinnamate with 1 per cent. cocain in physiologic salt solution. Improvement was apparent in a few days.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

General Medicine. Edited by F. Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, M.D., Professor of Medicine, Chicago Clinical School. Practical Medicine Series, comprising Ten Volumes on the Year's progress in Medicine and Surgery under the Editorial Charge of G. P. Head, Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Vol. VI. Series 1906. Cloth. Pp. 363. Chicago: The Year Book Publishers.

Heart Disease and Aneurism of the Aorta, with Special Reference to Prognosis and Treatment. By Sir William H. Broadbent, Bart., K.C.V.O., Physician in Ordinary to H. M. the King, and to H. R. H. the Prince of Wales, etc., and J. F. H. Broadbent, M.A., M.D., F.R.C.P., Physician to Out-Patients, St Mary's Hospital; Assistant Physician to the London Fever Hospital. Fourth Edition. Cloth. Pp. 479. Price $4.00. New York: William Wood & Company.

Gastric Surgery. Being the Hunterian Lectures, Delivered Before the Royal College of Surgeons of England on February 19-21, 1906, by H. J. Paterson, M.A., M.B., B.C., Hunterian Professor of Surgery and Pathology at the Royal College of Surgeons, Assistant Surgeon to the London Temperance Hospital. Cloth. Pp. 181. Price, $2.00 net. New York: William Wood & Company.

Nature and Treatment of Cancer (*Some Methods of Hypodermic Medication in the Treatment of Inoperable Cancer*). By J. A. Shaw-Mackenzie, M.D., Lond. Third edition, revised and enlarged. Cloth. Pp. 99. Price, $1.25 net. New York: William Wood & Company.

Rational Organotherapy, with Reference to Urosemiology. By A. v. Poehl, J. v. Tarchanoff, Alf. v. Poehl and others. Translated from the Russian Text. Vol. I. Cloth. Pp. 239. Price, $3.00 net. Philadelphia: P. Blakiston Son & Co., 1906.

New Serum-therapy. By D. Montgomerie Paton, L.R.C.S. and L.R.C.P. Cloth. Pp. 311. Price, $2.25 net. New York: William Wood & Company.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

Vol. XLVII. CHICAGO, ILLINOIS, OCTOBER 6, 1906. No. 14.

Original Articles

MEDICAL FEES IN COUNTRY PRACTICE.*

W. O. BRIDGES, M.D.

OMAHA, NEB.

At no time in the history of this country has general prosperity among our people been on so high a plane. To whatever preponderating cause theorists may attribute this fact, it must be admitted by all that one of the chief of those advanced is the financial independence of the American farmer. To him we owe the origin of a large proportion of all wealth. From him we expect the purchase, utilization and consumption of products and manufactures applied in his supplemental sustenance and as a means toward the accomplishment of his work and the comforts of his home. Between him and the source of his purchased needs is that great army of so-called middlemen inhabiting the great cities, manufacturing centers and the country towns and villages, whose very life is largely, if not completely, dependent on the tiller of the soil.

When the American farmer is prosperous, prosperity is general. In time of drouth, the manufacturer, the merchant and the coupon cutter experience adversity. Cities destroyed completely by Nature's freaks and fires rise again in the night, grander, loftier and more attractive than ever. Destruction of the tillable soil by whatever cause means devastation, poverty and distress, possibly for all time. There is no prosperity so continuous, so substantial and so elevating to mankind as that whose foundation is laid by the man, who, profiting by his knowledge of natural laws, digs out of the ground that which goes to support his fellow-man. To this account more than any other may be laid the wonderful accomplishment of this republic in a trifle over one hundred years, occupying to-day probably the foremost position among the nations of the earth.

The prosperity of the farmer affects directly the middlemen in his nearby town. When the farmer has plenty to sell at good prices, the banker, preacher, storekeeper, druggist, carpenter, painter and saloonman are kept busy in his wake. The result is more work, better returns and a general advance in the material development of the town. These thoughts, with the knowledge which has come to me of the fees charged by physicians in country practice, have led to the query: Does the country doctor participate in the benefits which accrue to his fellow-townsmen, because of the material advancement of the farmer, in like degree? In other words, has his income from his practice kept pace with the times? Is he receiving the remuneration commensurate with the increased cost of his education, with the advance in the price of his necessities, the hard work and responsibilities of his calling?

PHYSICIANS' FEES.

In a somewhat extended association with the physicians of Nebraska and western Iowa, I have come to learn something of the details of their work, the trials of their life and their compensation for service. Two facts ascertained have impressed me, one, the uniformity of their fees, and the other the low prices charged. For instance, inquiries of men, practicing in Iowa, north, east, central and southern Nebraska, in towns of 1,500 or less, showed up a schedule about as follows: Day visit in town, $1.00; office consultation and prescription, 50 cents; visits in the country, mileage one way only, 50 cents, and in some instances (a minority) $1.00 in addition for the call; obstetric attendance, $10.00 in the country and a few reported mileage 50 cents in addition. Many make no additional charge for instrumental deliveries, and those who did made a fee of $5.00 in addition. An extra charge for night work of any kind was a rarity, and the fees were not affected by storm, deep mud or other influences occasioning delay and undue exposure.

Individual reports, particularly of obstetric experience, were interesting, and some of which indicated a disposition to charge less than the schedule. I will recite one in point: Dr. T. was called four miles from town to assist Dr. B., who had been with a primipara twelve hours. Forceps had been applied at the inferior strait without result after prolonged effort. After examination and consultation, Dr. B. gave an anesthetic, Dr. T. applied the forceps and in an hour later delivered the child with a considerable perineal tear, which was repaired. Two weeks later Dr. B. asked Dr. T. what his fee was. He replied: "Oh, $15.00." Dr. B. rejoined: "That seems pretty steep, as I can not send them a bill for more than $20.00 for both our services and I had to catheterize her for three days after delivery." Dr. T. replied: "Then, make it $10.00." The patient's family was in comfortable circumstances.

COMPARISON OF CHARGES IN VARIOUS PARTS OF THE COUNTRY.

Several weeks ago, desiring to ascertain how the fees charged in this section of the country compared with those elsewhere, I wrote a number of letters to physicians in small towns in various parts of the country and received answers from North Carolina, Texas, Wisconsin, Arkansas, North Dakota, California and Utah. In all except two, Wisconsin and North Carolina, town visits were charged at $2.00 or above (California $2.50); office consultations, $1.00 or above (California $1.50). Three physicians reported visits in the country at $1.00 mileage one way, without extra charge for visit, one the same with $2.00 extra for visit, and three 50 cents mileage and $1.00 extra for visit. Consultation fees were $10.00 in four reports, $5.00 to $10.00 in one and $5.00 in two. Obstetric attendance was reported at

---

* Read before the Nebraska State Medical Society, Lincoln, May 5, 1906.

$25.00 in one (California), $25.00 in town and $30.00 out, in one (Utah), $15.00 in one (North Dakota), $10.00 and mileage in one (Wisconsin), and $10.00 in three. Forceps delivery additional charged in one $25.00 (Texas), $10.00 to $25.00 in one (Utah), $10.00 to $15.00 in one (California), $15.00 in one (North Dakota) and $5.00 in three. For night visits three physicians reported double day charges, two one-half more and two no extra charge. While there is no complete uniformity in the answers to my queries, it is very evident that in all save two (Wisconsin and North Dakota) the fees charged for like services are much higher than they are here, and yet it must be assumed that Iowa and Nebraska are as prosperous to-day as any section of the country.

INCREASED FEES OF ADVANTAGE TO PATIENTS AS WELL AS TO PHYSICIANS.

Looking over the subject of physicians' fees in the past twenty-five years, one is impressed with the fact that the charges made by men in country practice have not advanced one cent, whereas the classes of people whom he serves have doubled, trebled and even quadrupled their incomes. Twenty-five years ago the outlay for the physician's medical education in time required and money expended was less than one-half the present cost and in consequence thereof the value of service which he gives to-day as compared with the former period can not even be measured in dollars and cents. The charge of 50 cents for an office prescription may be all the prescription is worth many times, for, if it is the prescription which the fee is made for, the patient is not getting more than his money's worth. Too often is this impression given to patients or too seldom is he led to understand that the prescription is only an end result of an examination which requires technical knowledge and experienced judgment. A 50-cent fee is too apt to mean a 50-cent service. This is no reflection on the doctor whatever, for human nature is the same everywhere, and so long as it is the custom for our services to be measured in money value the reverse in most instances will apply, the value in money determines the service. To state an opposite hypothesis may make this statement seem less critical. Suppose the fee charged for office consultation were arbitrarily fixed at $5.00, is there a single physician in this state who would be content simply to ask a few questions, look at the tongue, determine the absence of fever, by the hand contact, turn around and write a prescription? What applies to a 50-cent office fee applies also to a dollar visit in town, a mileage of 50 cents without visit fee in the country and a twenty-four to forty-eight hour obstetric fee of $10.00. The low-fee proposition has two principal bad results for the physician. By the undervaluation of his own service, his confidence in himself in time suffers, his work becomes superficial and he ceases to develop, and, failing to earn a competency during the active years of his professional life, he too frequently goes into his old age without the necessities of life or is dependent on relatives for support. On the other hand, fees proportionate to good service mean much to the doctor. The stimulus to be thorough and painstaking, to think and to study over his cases, to relieve him of the necessity of outside financial interests, means much for his professional advancement, for the increased revenue and his inclination lead him to seek the change and advantages offered by the postgraduate schools and by the hospitals of nearby cities. He also feels better able to afford the time and pleasure of the county, state and national societies more frequently.

There is no community which would not be greatly benefited by an increased income to all the members of the profession in their midst. Suppose, for example, that each physician in a town having six physicians should devote from three to six months every six years to postgraduate hospital work, what effect would this have on the value of his service and who else would profit by it? Does a physician ever go to a county, state or other medical society meeting without receiving some new suggestion or having awakened some new thought? If he goes to Chicago, New York, Philadelphia or Baltimore for a month in contact with other medical men, does he not return with renewed determination to get out of a rut and to stay out? If he can figure that his professional income will admit of his doing this, and that by so doing he will gain vantage ground, and by the very move still further increase his income, is he not standing in his own light not to do it? Farther than this, does not his duty to his patrons and his influence in the community require him to do it? And if so, should they not pay for it in fees which will permit of a little more than a comfortable living? When I have talked with some of my professional friends about this subject, the reply has been "The fees in our community have been fixed so long that our patrons would rebel at any increase, and, furthermore, there would be lack of uniformity in competing towns and we might sacrifice our business." To the first suggestion I would offer a protest. From what I have written above as to the character of the service, it is assumed that the farmer or the tradesman is willing to pay for what he buys. If he is made to see that what he buys is worth the money, he pays. That he is not averse to doing so can be demonstrated time and time again, when he is seen to pay railroad fare in addition to a good-sized consultation fee to some city doctor, who may be no better or perhaps not so good as his own physician.

The increase and prestige of men aiming somewhat at specialization in small towns is an indication that good fees may be asked and collected without hesitation. Recently I saw a patient with her physician four miles from a town of 400 in the central part of the state. In eliciting the history, it was ascertained that six months ago the previous physician's first introduction to the family had resulted in a diagnosis of a large ovarian tumor. He advised her removal to a city hospital for an operation. Following part of his advice, she went to the next town, where the tumor was removed by a local surgeon who charged and collected $300.00 and $20.00 a week for a room and nursing. Let any one tell me that farmers will not pay the price, when this same work could have been done in Omaha for $50.00 and in Lincoln for probably $75.00.

ORGANIZATION AND A FEE SCHEDULE.

The frequency with which farmers and people from small towns go to nearby cities for minor medical and surgical consultation, ignoring often the local physicians, is, to my mind, the surest indication that they want to pay more, for, as a disinterested spectator, I have often seen them go to men inferior in every way, except in the fee. A young physician recently located in a fine Nebraska town complained to me that the outlook was poor, for nearly all the best people there went to the city, twenty miles away, for their medical advice

I advised him of his great opportunity, for if he had the incentive to charge enough and an aim to earn his fee, with his qualifications, which I well knew, he could turn the tide in his own favor.

Would any reasonable man object to paying the doctor more for night than day work if asked? He has to pay the carpenter, the painter, the plumber who do overtime work at an increased rate, and why should he kick on the doctor? I have been surprised at the number of men who informed me that they did not discriminate between the fees for day and night work. A busy man at this rate burns the candle at both ends and quits at an earlier age without much to show for it. When one considers the number of unnecessary calls to which the physician is subject during his sleeping hours, he must feel that, with no difference in cost to the patron, it is a matter of slight concern whether he waits till night. An increase in the fee for this work would anticipate or postpone a sufficient number of calls to save the doctor much valuable time for his natural rest and keep him busier in the daytime. For the absolutely necessary work it would be a small man who would refuse double fee.

The question of custom and competition is advanced as a theory for low fees. How easy this can be corrected s exemplified by the statement of a physician from the southern part of the state to me only a few days ago. The subject of a fee schedule came up for discussion at a meeting of his county society, and an advance all along the line was agreed on. There were six towns in the county and between them a splendid large farming community. The new schedule was published in every newspaper in this county, duly signed by the members. He said there was some kicking for a while, but the new rates were soon accepted and had been in full force for some time. Organization, then, must be the solution of the question. The county and district societies should do as much for the doctor in this regard as they do in every other, and I am not so sure that a move in this direction by the state society for a minimum schedule which would be adopted by all its component parts would be in the right direction. It would do away with variations in schedules applicable to border towns and would be much more easily lived up to. I believe the competition element so far as fees are concerned in the selection of a physician is much overestimated. In time of drouth and depression, with poor crops and burdened farms, it might prevail, but certainly the drift at the present time of progress and prosperity is toward getting results, even if it does cost. Granting that nonmembers of societies or a few backsliders would keep up the old custom, this should not deter those who believe that a workman is worthy of his hire and by this very assumption attract those who believe with them. It was said of an old physician of my acquaintance that he had a large following, not because he knew more than any of his colleagues, for he really knew less than many of them, but because he charged large fees. If this kind of a bluff works, how much more effectual it must be if it is backed up by sincere effort, painstaking care, and a disposition to be worth the price.

My aim in bringing this subject up in this form is to unload a growing impression on my mind that the doctor in country practice in Nebraska is underpaid and that he himself is mostly to blame for it, that his schedule of fees has not advanced with the requirements of his education, of his needs and of his position, and that by means of a well-directed effort, individually and collectively, there is no reason why results should not be accomplished which would not only be to his advantage, but would react favorably on his constituency.

FURTHER OBSERVATIONS ON ROCKY MOUNTAIN SPOTTED FEVER AND DERMACENTOR OCCIDENTALIS.*

H. T. RICKETTS, M.D.
CHICAGO.

In view of the brief season during which Rocky Mountain spotted fever prevails, uninterrupted study of the disease is conditioned on the maintenance of the infection in experiment animals.

In a previous communication[1] my inability to preserve the disease by inoculation from guinea-pig to guinea-pig was referred to, and the hope was expressed that alternation of the infection between the monkey and the guinea-pig might result in the preservation of the virus.

This experiment has been entirely successful and Table 1 illustrates the life history of the virus since it was obtained from the patient, Bradley.

TABLE 1.

Number of animal.	Date.	Source, and Material Inoculated.
Monkey I	June 11	Patient, Bradley; defibrinated blood.
Monkey II	June 20	Monkey I; defibrinated blood.
Guinea-pig 12	June 27	Monkey II; fresh heart's blood.
Monkey IV	July 7	Guinea-pig 16; blood and organs.
Guinea-pig 16	July 14	Monkey IV; defibrinated blood.
Monkey V	July 22	Guinea-pig 16; blood and organs.
Guinea-pig 17	July 28	Monkey V; defibrinated blood.
Monkey VI	August 3	Guinea-pig 17; blood and spleen.
Guinea-pig 25	August 16	Monkey VI; blood and serum.
Monkey VIII	August 23	Guinea-pig 25; blood and organs.
Guinea-pig 36	August 30	Monkey VIII; spleen.
Monkey IX	September 6	Guinea-pig 36; blood and organs.

All infected animals have run identical courses of fever, which are typical in this respect, that an incubation period of from two to four days intervenes between the time of inoculation and the onset of the regular febrile course. Commonly a moderate rise in temperature follows immediately on the inoculation and persists for one or two days, then falls near to normal for one or two days more, when the customary course sets in. This initial or primary fever probably is caused by intoxication from the large amount of material which is frequently injected. When a smaller amount of blood or emulsion of tissue is used this initial fever has not appeared.

Several facts are relied on in concluding that the disease transferred by these inoculations is spotted fever rather than some other infection which may have crept in during repeated passage. In harmony with the experience which was met in making cultures from man, no growth is obtained from the blood of infected animals, provided the cultures are made at a time when agonal or postmortem invasion by common bacteria has not taken place. If plates are inoculated with the heart's blood at the instant of death, it is customary to obtain no visible growth on ordinary media, yet this same blood proves infectious for other animals. Again, the rather frequent development of a

---

* This work has been done under a grant made by the American Medical Association through the Committee on Scientific Research, and with the aid of Missoula and Ravalli counties, Montana, and of the Montana State Board of Health.

* From the Pathological Laboratory of the University of Chicago.

[1] The Study of Rocky Mountain Spotted Fever (Tick Fever?) by Means of Animal Inoculations, THE JOURNAL A. M. A., July 7, 1906.

hemorrhagic eruption in the monkey or guinea-pig, a manifestation which is identical in appearance, if not in distribution, with that seen in man, speaks for spotted fever rather than some other infection. This eruption is much more constant in the monkey than in the guinea-pig. In both animals it begins on the scrotum and foreskin. In the guinea-pig it may be found on no other part of the body, although it can be seen as a more or less generalized eruption occasionally. The external genitals of the female guinea-pig commonly become swollen and congested; recently, however, extensive hemorrhages have occurred in the skin of the labia in a number of females. But one female monkey has been used, and in her no cutaneous hemorrhages were discovered. It will be readily understood that the detection of a pink roseolar eruption in either the monkey or the guinea-pig is difficult. In the guinea-pig it can be recognized with certainty only in white-skinned animals. In both animals the hemorrhagic eruption, when it appears, is a late manifestation and it would seem to be related in some way to the virulence and duration of the infection. The disease may be so virulent that the animal dies before the eruption would appear, or so mild that it does not occur. The appearance of the hemorrhages does not necessarily presage a fatal issue; two monkeys and several guinea-pigs which had extensive hemorrhages into the skin have recovered.

A third fact which stamps this experimental disease as spotted fever consists of the identity of the course of fever with that produced in the animals by direct inoculation with human blood.

The essential anatomic changes, enlarged spleen and lymph glands, congested kidneys, etc., are identical with those seen in the animals first inoculated, and correspond with the changes found in man.

There seems to be no particular difficulty involved in perpetuating the infection, except in the matter of expense. Duplicate inoculations should be made and the blood or organs used for inoculation may be taken at any time after the fever has reached its high point. To await the death of the animal before making the transfer is to risk the loss of the culture; the animal may recover.

THE DISTRIBUTION OF THE VIRUS IN THE BODY OF THE INFECTED ANIMAL.

In my first experiments the infectiousness of the blood, in spotted fever, was demonstrated. It would naturally by inferred that the various organs are infectious at least to the degree in which they contain blood. On this account one would reasonably expect the spleen to be infectious and this has proven true in a number of inoculations. The testicles have been used for inoculation a number of times. It was thought that the testicles might be a point of predilection for the virus, in view of the severe hemorrhages which often occur in close proximity to them, i. e., in the scrotum. They were shown to be infectious in several instances, yet their virulence was not so great as to indicate any special concentration of the virus at this point. The scrotal hemorrhages may have no relation to the amount of infection of the testicles.

The distribution of the virus among the organs of an infected monkey (VIII) was recently determined. The animal was exsanguinated from the carotid to deprive the organs of as much blood as possible. Each organ was then ground with sterile sand and suspended in physiologic salt solution. Identical weights of the different organs were not used, but approximately the same mass was employed in each case. A further attempt at uniformity was made by rendering the different emulsions of approximately the same density. Five cubic centimeters of each emulsion were injected intraperitoneally into guinea-pigs, which varied in weight from 350 to 550 grams. Table 2 shows the results.

TABLE 2.—The Infectiousness of Different Organs.

Number.	Material inoculated.	Result.
35	Mesenteric, inguinal and axillary lymph glands.	Death in 18 days.
36	Spleen.	Death in 7 days.
37	Bone marrow.	Death in 6 days.
38	Testicles.	Death in 15 days.
39	Liver.	Death in 8 days.
40	Kidney.	Death in 7½ days.
41	Medulla oblongata.	Recovered.
42	Cerebral cortex and adjacent white matter.	Death in 12½ days.

In the fatal cases cultures of the heart's blood were sterile except in the case of guinea-pig 37, in which a few colonies of a staphylococcus developed. The technical difficulties in preparing the bone marrow increased the opportunities for infection. It is thought very probable, however, that the animal died of spotted fever because of the duration of the course.

Those organs seemed to be the most infectious which contained, naturally, the most blood, i. e., the liver, spleen, and bone marrow (?). In these organs exsanguination still leaves rather large quantities of blood. The kidney, however, was fully as infectious as the organs which were much richer in blood. It is possible that the kidney becomes the repository of a larger mass of micro-organisms, by virtue of its excretory function. It is realized that this experiment does not give an exact measurement of the degree of infection of the different organs, and that the results, at the best, can be considered no more than approximate.

In another experiment an attempt was made to determine the minimum fatal dose of the blood of the infected monkey, the blood being taken six days after inoculation. The injections were intraperitoneal (Table 3).

TABLE 3.—Virulence of the Blood of the Infected Monkey

Guinea-pig.	C.c. of Blood.	Result.
30	0.5	Death in 14 days.
33	1.0	Death in 7½ days.
31	1.5	Death in 7½ days.
32	2.0	Death in 13½ days.
34	3.0	Death in 6½ days.

Plate cultures of the heart's blood were sterile in all cases. In this experiment the minimum fatal dose of the blood of the infected monkey on the sixth day of the disease was in the vicinity of 0.5 c.c. Guinea-pig 30, which received this dose, died on the fourteenth day, whereas, animals which live so long ordinarily recover. Guinea-pig 32, which received 2.0 c.c., showed unusual resistance. The guinea-pigs weighed about 350 grams each. Other experiments indicate that subcutaneous and intravascular inoculations have a similar degree of virulence.

ACTIVE IMMUNITY.

I have not learned of an authentic example of a second attack of spotted fever in man, hence it has seemed somewhat probable that one attack renders the body immune. This has been found to be true in a recent experiment on the monkey.

On June 20, 1906, Monkey II was inoculated with the blood of Monkey I, the latter having just died as the result of inoculation with the blood of the patient, Bradley. Monkey II ran a typical course of fever, showed a macular eruption of the perineal skin on the eighth day, and extensive hemorrhages of the scrotum.

perineum, back and extremities on the eleventh day. The temperature returned to normal on the twelfth or thirteenth day, hence the eruption became hemorrhagic as convalescence was about to begin. The animal regained its former health and activity.

Recently this animal was again inoculated with the blood and tissues of an infected guinea-pig (No. 36). The total mass of fluid injected was 8 c.c. With the exception of some indisposition on the following day, the injection produced no apparent effect. For a few days the temperature was slightly higher than before, but during this time and since the monkey has shown no indisposition and has been as active as before inoculation.

By way of control another monkey of the same size (No. IX) was inoculated with the same amount of material, the same quantity and by the same route. Between the third and fourth days the temperature began to rise, and until it was killed (7 days), it ranged between 105.1 and 106.3. The conjunctivæ became reddened, the animal shivered at frequent intervals and sat, inattentive and with head drooping, continuously. On the fifth day the supraorbital skin showed reddened patches, and on the sixth day a roseolar eruption was visible on the scrotum. The blood and tissues were used for further experiments.

From this experiment it is evident that one attack in the monkey confers an active immunity, and on the basis of reasonable analogies one may conclude that man probably acquires a similar immunity.

A similar acquired immunity has also been demonstrated in the guinea-pig. Its duration, beyond the period of two months for the monkey and three months for the guinea-pig, has not been determined.

THE LIFE HISTORY OF DERMACENTOR OCCIDENTALIS.

On account of the suspicion which attaches to *Dermacentor occidentalis* as the carrier, or a carrier of Rocky Mountain spotted fever, its life history is important. The following brief notes concerning this question are given by way of recording the changes which were observed under artificial conditions. No description of minute morphologic changes will be given at this time.

May 20, 1906, a fully developed female was placed in a cotton-stoppered test-tube.

June 21 (about), the tick began laying eggs, of which several hundred (estimated) were eventually deposited.

June 28 or 29 hatching began and continued for a week or ten days, resulting in six-legged larvæ of minute size.

July 13, the tube with its contents was placed in a tick-proof cage with a guinea-pig. The larvæ took hold readily for the most part, but did not feed continuously. They increased slightly in size. Eventually all remained attached to the skin for several successive days, grew to a length of 1 to 1¼ millimeters, and became swollen and of a uniform dark slate color. On August they began to drop from the guinea-pig, moved to a safe place, and went into a quiescent state, appearing as if dead.

August 5 they began to molt, throwing off a snow-white pellicle, and came out as eight-legged nymphs. After 7 to 10 days the molting of the brood was almost complete. When they first appeared they approximated the size of the well developed larvæ.

When again placed with a guinea-pig or monkey they seemed to feed intermittently for a time, but eventually attached themselves firmly and underwent a great increase in size, some reaching a length of about 3/16 of an inch. With the increase in size the color again changed to that of a uniform gray-brown or slate color. It required from 6 to 10 days for this development to take place after the ticks were placed with an animal. On August 30, practically all the ticks which remained alive had undergone this change.

As they reached the condition mentioned they were removed and placed in ventilated boxes where they went almost immediately into a second quiescent stage. In about 10 days molting again began, a white mantle being thrown off, and the mites emerged as adult ticks with the marking which one finds under natural conditions in the early months in Montana.

The experiment was carried on entirely at room temperature, and the various stages may not correspond in point of time with those taking place under natural conditions.

Under natural conditions, in the Bitter Root Valley, the adult ticks begin to disappear during the latter part of June. This probably means that the males, and those females which have not found a host, die, whereas the fully developed females deposit their eggs. Locally, knowledge of the further history of the tick was limited, or nil. It is certain, however, that during the warm summer days, the conditions are favorable for the hatching of the eggs, and for the development of the larvæ, provided a host is reached. Inasmuch as a crop of adult ticks is not observed in the fall, it is possible that the second molting stage, mentioned above, represents the hibernating stage of the mite. It is well known, locally, that the first few warm days of the spring bring out the ticks. These few warm days apparently would be sufficient to bring to completion the second molting stage. On the other hand, it must be admitted as possible that the second molting stage is completed in the late fall, and that hibernation begins at once with the animal fully developed, the first few warm days of spring being sufficient to arouse him.

Observations of a more complete nature will be made at a future date.

OSTEOPLASTIC RESECTION OF THE COSTAL ARCH IN ORDER TO REACH THE VAULT OF THE DIAPHRAGM.*

WILLY MEYER, M.D.
Professor of Surgery at the New York Post-Graduate Medical School and Hospital; Attending Surgeon to the German Hospital; Consulting Surgeon to the New York Skin and Cancer Hospital and to the New York Infirmary.
NEW YORK.

Of all the regions within the abdomen the vault of the diaphragm is the most difficult of access, principally owing to the unyielding character of the lower portion of the thorax.

Various methods have been devised to overcome the difficulty. In cases of subphrenic and intrahepatic abscess or cysts of the convexity of the liver, one or more ribs have been resected, the pleural sac traversed or pushed up and drainage in a straight direction arranged for.

For the same purpose Lannelongue did resection of the eighth to the eleventh costal cartilages or of the respective ribs—a rather extensive additional operation.

Micheli[1] worked out on the cadaver an operation similar to Schede's thoracoplasty. Of course, he avoids injury to the pleura and includes in the flap, diaphragm and parietal peritoneum. It seems that the operation was never done on the living subject.

---

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Tenth Italian Congress of Surgeons, 1895.

While attempting to excise a carcinoma of the cardia and lowest portion of the esophagus, von Mikulicz once tried a plan very much like the one just described.[2] In a second case he made a median incision above the umbilicus, an additional transverse one at right angles with it and three further incisions, exposing the seventh, eighth and ninth ribs near their costo-cartilaginous junction, where the cartilages were divided. Then the flap plus costal arch could be pulled to the left and the cardia reached. In both instances the patient succumbed to the effects of the serious operation on the stomach.

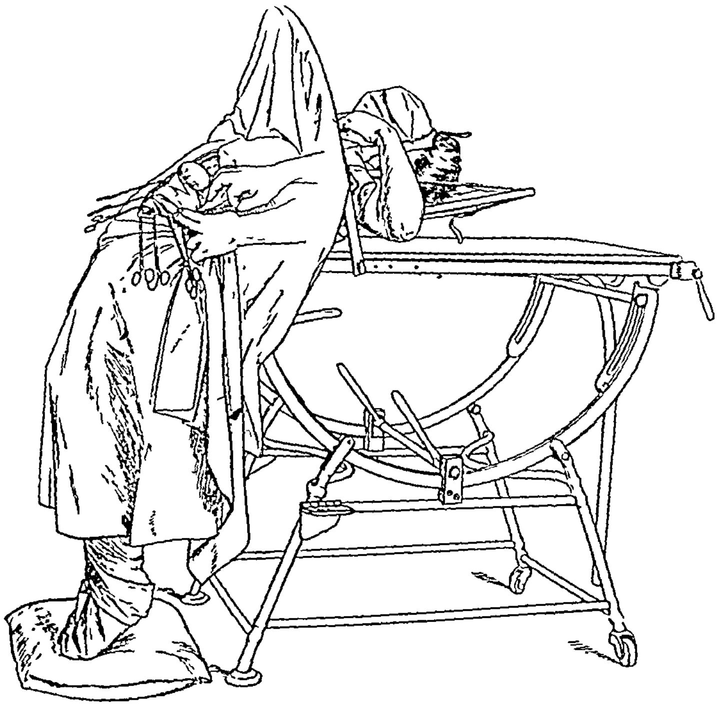


Fig. 1.—Kelling's position for the upper part of the abdomen.

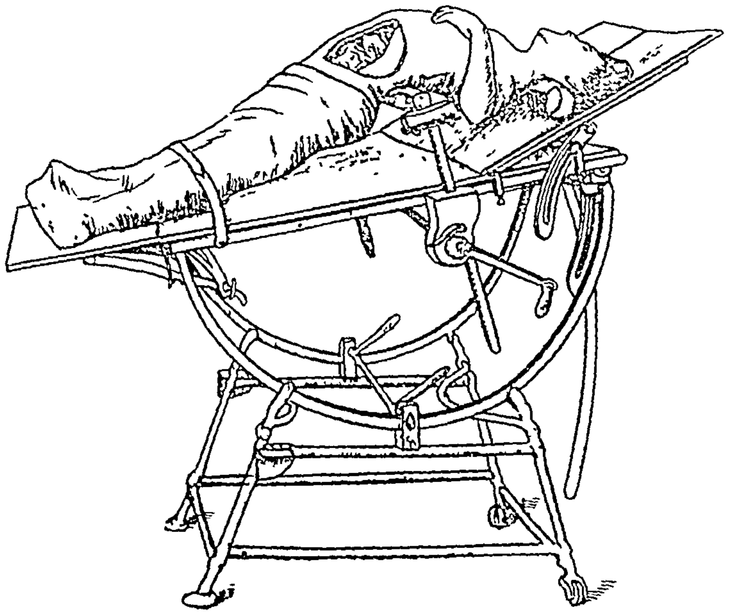


Fig. 2.—Kelling's later modification of the posture shown in Fig 1

In 1901 G. Kelling[3] recommended the posture which is best explained by Figure 1 taken from his article. It shows a Trendelenburg posture, as it were, for the upper part of the abdomen, "Beckenhängelage" in contradistinction to Trendelenburg's "Beckenhochlagerung." The posture seems cumbersome and makes the maintenance of perfect asepsis difficult. Later, Kelling[4] suggested in its place the posture shown by Figure 2.

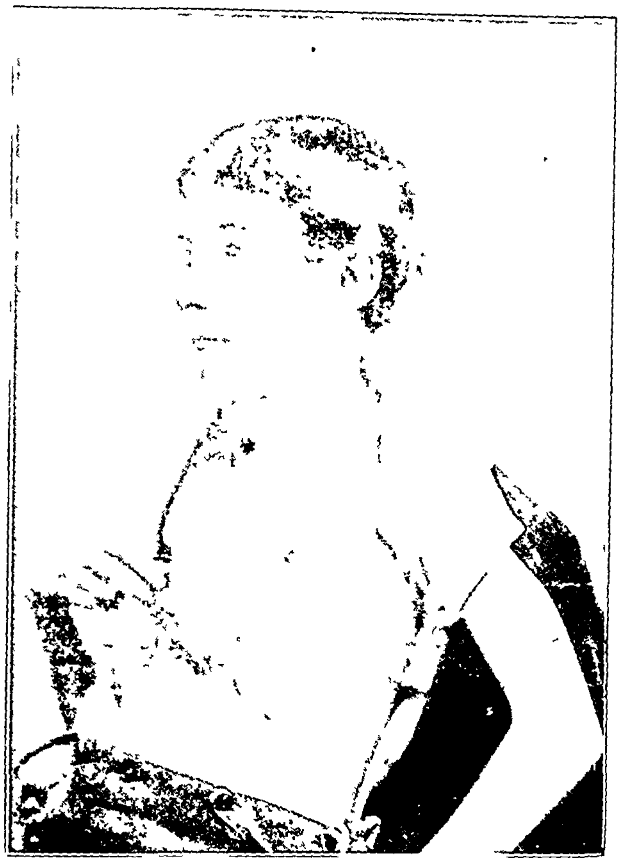


Fig. 3.—Osteoplastic resection of the costal arch in the presence of a gastric fistula by means of a U-shaped incision for an impermeable cicatricial stricture of the esophagus.

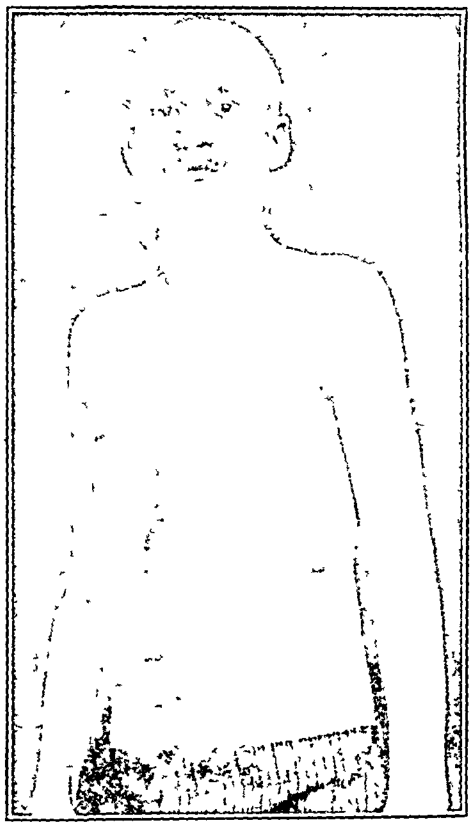


Fig. 4.—View of patient, four weeks after splenectomy for sarcoma

I doubt that this posture will make it possible to operate conveniently near the top of the diaphragm in difficult cases.

---

[2] G. Gottstein: Technik u klinik der Oesophagoskopie, Mitteilungen aus den Grenzgebieten, vol. viii.

[3] Centbl. f. Chir., 1901, No. 42, p. 1025.

[4] Centbl. f. Chir., 1904, No. 4, p 89.

Two years later, G. Marwedel,[5] unaware of von Mikulicz's previous attempts in a similar direction, described a simplified operation, an osteoplastic resection of the lower anterior portion of the thorax which he had thoroughly worked out on the cadaver and once successfully carried out in the living. The operation is less complicated than von Mikulicz's procedure. Asthoewer,[6] a few months later, stated that he also had done two somewhat similar operations several years before Marwedel.

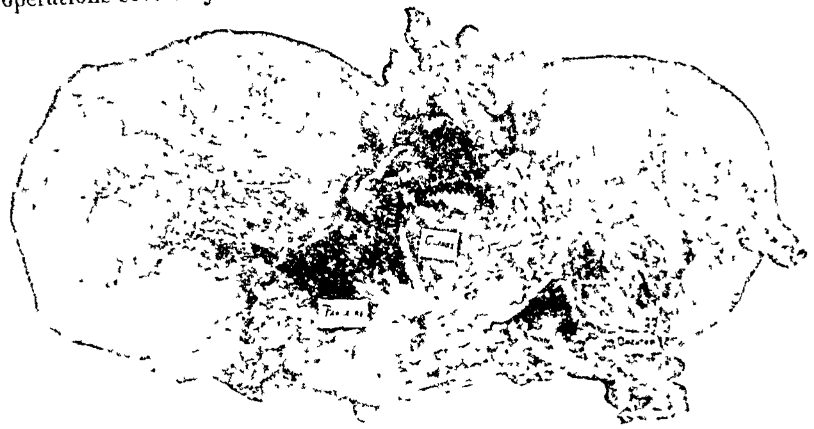


Fig 5.—Multiple sarcoma of spleen, secondary to retroperitoneal sarcomatous glands, the spleen being the only intraperitoneal organ showing metastatic growths. The distal half of the pancreas is attached to the tumor.

Within the last two years I have had occasion twice to employ osteoplastic resection of the costal arch. It enabled me conveniently to do the work required, which otherwise would have been impossible. The various steps and important points of the operation can be brought out best, I think, by briefly relating the histories of the two cases:

Case 1.—This case has already been fully described.[7]

Summary of History.—A boy, 14 years of age, had an absolutely impermeable cicatricial stricture of the esophagus (caustic lye). For eight years he had been fed entirely through a gastric fistula. All attempts to enter the stomach from above as well as under direct inspection with the urethral speculum introduced through an esophageal lip fistula in the neck having failed, an osteoplastic flap was raised by a U-shaped incision, the water-tight gastric fistula being carefully preserved (Fig. 3). A part of the anterior wall of the stomach, well above the fistula, was thus reached, horizontally incised and the passage upward searched for from below.

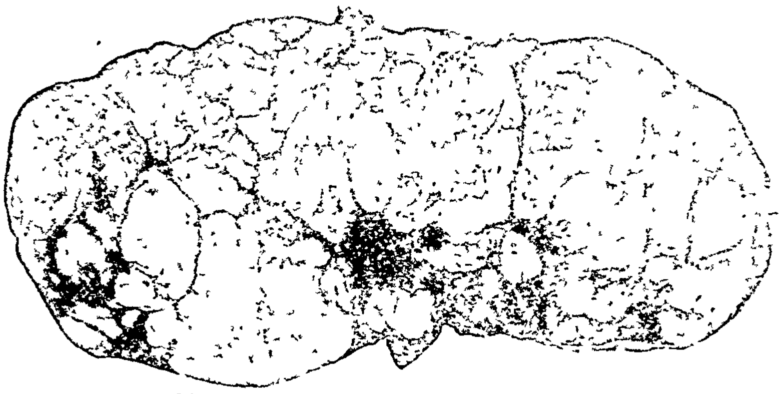


Fig 6.—Same specimen divided longitudinally.

To my great disappointment this attempt, too, proved unsuccessful. The esophagus was evidently entirely obliterated for some distance. The stomach incision was, therefore, closed again by means of a double row of Lembert silk sutures; the osteoplastic flap was fitted back in its place and the skin sutured; there was no drainage. The boy made a good recovery. I saw him a few weeks ago. He still nourishes himself through the tube (in all now for ten years) and has gained in weight.

Two ways are still open to help this patient: 1. To raise again the osteoplastic flap, this time opening the stomach by a perpendicular incision just below the cardia, which, as I had seen at the time of the first operation, could be entirely brought into view and pulled down from the foramen esophageum for fully an inch and a half; or, better, 2. To attempt esophagogastrostomy in Sauerbruch's chamber under negative pressure,[8] or in Brauer's new apparatus with the bronchial tree placed under increased pressure.[9] For the present the boy's mother is opposed to further operation.

Case 2.—Patient, a male, 29 years of age, came under my care in December, 1905.

He had entered the medical division of the German Hospital on account of a rapidly enlarging spleen and great weakness. The spleen was found to reach the umbilicus; its surface was nodular; there was some fluid in the abdomen. Diagnosis of malignant tumor (sarcoma) of the spleen was made and the patient transferred to the surgical division.

Operation.—On opening the abdomen, December 18, a large amount of sero-sanguinolent fluid escaped; the adherent omentum having been loosened and lifted out of the abdomen, the nodular spleen came into view. It was attached to many of the neighboring organs and particularly tightly fastened in the vault of the diaphragm. There was no metastatic growths in the liver or elsewhere. Radical operation was clearly indicated, chiefly in view of the patient's youth. Splenectomy was decided on. A transverse incision to the tip of the eleventh rib was added (Fig. 4). While this rendered access somewhat easier, it was still impossible to reach the upper pole of the spleen, although the lumbar spine had been well raised and the legs considerably lowered, while one assistant pulled the costal arch to the left with two hands, the other making traction on the enlarged spleen downward as far as possible.

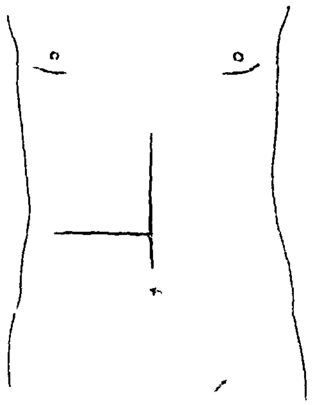


Fig. 7.—Right-angled incision.

It was evident that I should either have to give up or try some other way. The only chance of success seemed to lie in getting the costal arch out of the way. I therefore entered the space between the lower surface of the belly of the left rectus muscle and the peritoneum with posterior sheath of the rectus muscle, to which, further outward, the transversalis muscle is attached. From here I bluntly made my way upward to the border of the costal cartilages, which were quickly brought into view (Fig. 13).

This part of the work is very simple, for the reason that the rectus and external oblique muscles have their origin further up on the thorax and are attached to the latter in the portion concerned by very loose connective tissue only.

Then the seventh cartilage, representing the union of three,

---

[5] Centbl. f. Chir., 1903, p. 938.

[6] Centbl. f. Chir., 1903, No. 46, p 1257

[7] Med. News, Oct. 29, 1904

[8] Mitteilungen aus den Grenzgebieten, vol. xiii, p. 3; and Meyer, Willy: Annals of Surgery, May, 1905.

[9] Deuts med. Wochft, Sept. 21, 1905, and April 5, 1906

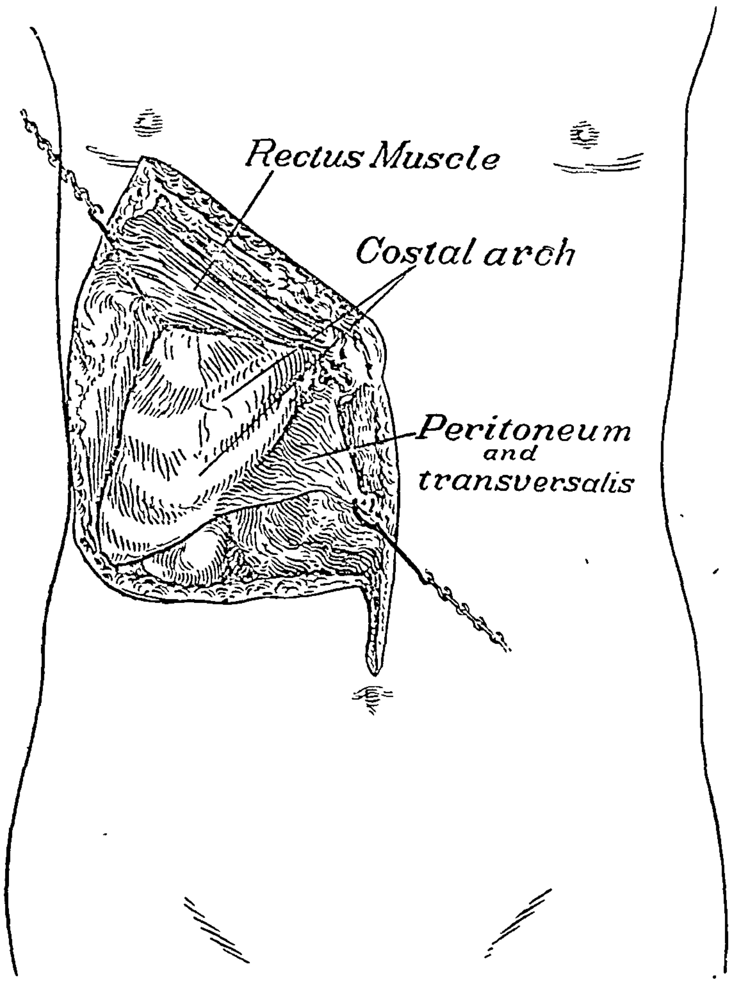


Fig. 8.—Right-angled incision. Skin-muscle-flap turned back, peritoneum and transversalis muscle remaining attached to costal arch, the latter exposed.

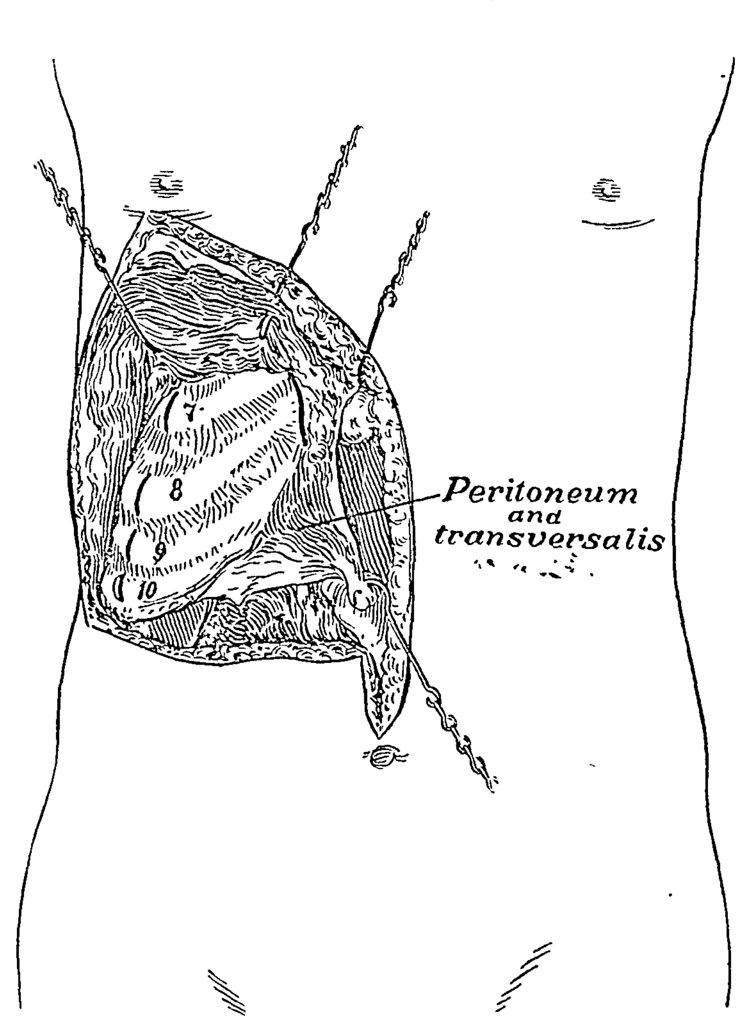


Fig. 9.—Right-angled incision. Seventh, eighth, ninth and tenth cartilages divided close to their juncture with the ribs; seventh cartilage, next to the sternum, also divided.

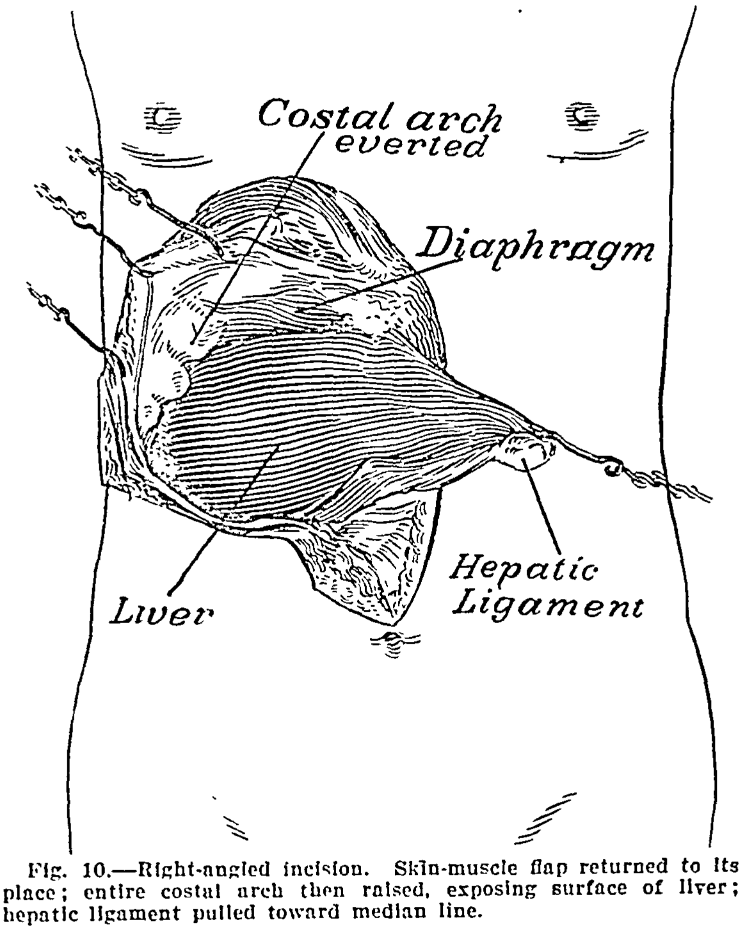


Fig. 10.—Right-angled incision. Skin-muscle flap returned to its place; entire costal arch then raised, exposing surface of liver; hepatic ligament pulled toward median line.

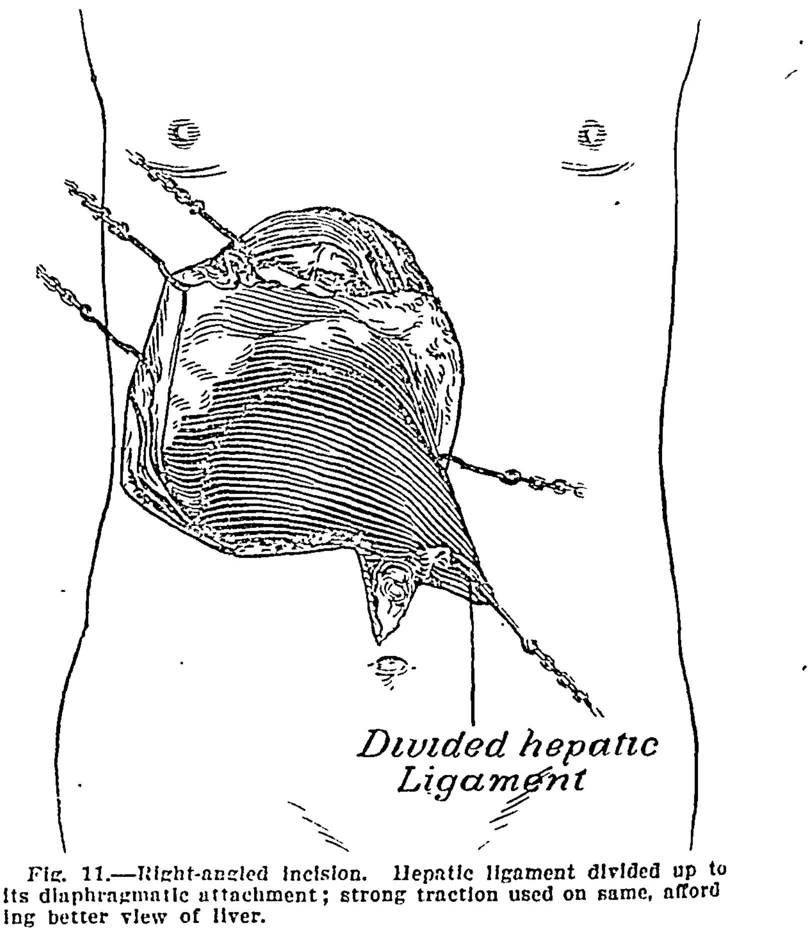


Fig. 11.—Right-angled incision. Hepatic ligament divided up to its diaphragmatic attachment; strong traction used on same, affording better view of liver.

was divided with the knife close to its sternal attachment, care being taken not to allow the knife to slip; and the seventh, eighth, ninth and tenth cartilages likewise, just in front of their union with the ribs (Fig. 14). Now the skin-muscle-bone flap is replaced in its normal position; two sharp retractors are hooked into the peritoneum and the costal arch is raised,[10] while the second assistant takes hold of the spleen, pulling it gently but firmly downward and inward.

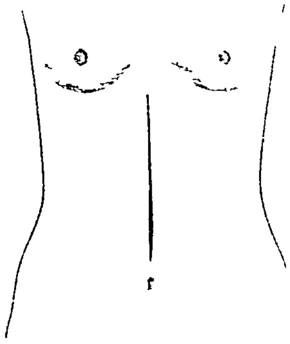


Fig. 12.—Straight, median incision.

It truly was fascinating to observe how readily the upper pole of the spleen with the ligamentum phrenico-lienale came into view and how the latter—in this case a short, broad, thick band —could be ligated in sections and then divided between two ligatures. The most delicate work in splenectomy, the division of the diaphragmatic attachment, could thus be carried out neatly and safely and in full view of the operator. Thereupon the spleen could be turned around its transverse axis, the upper pole made to emerge from the abdominal cavity and the whole organ gently pulled up by the first assistant, its pedicle thus being well stretched. It proved to be firmly adherent to the tail of the pancreas. From the latter a mass continued upward with the vena cava. I had to push off the latter, place a double chromicized catgut ligature around the body of the pancreas, divide it between the ligatures with Paquelin's cautery and tie off the greater portion of the adherent omentum At the splenic hilus only the large vein came into view. It, too, was divided between two ligatures, thus completing the operation, which had been done throughout in an absolutely bloodless manner. (Figure 5 nicely reproduces the interesting specimen.) Thereon a Mikulicz's tampon was placed in the diaphragmatic vault, the osteoplastic flap returned and pressed in position and the T-shaped abdominal wound carefully sutured. The abdomen was well strapped with zinc adhesive plaster and a snugly fitting binder tied around it. After two stormy days, when intravenous and subcutaneous saline infusions had to be freely used, the patient made a satisfactory recovery. He was up and about at the end of the fourth week (Fig. 14).

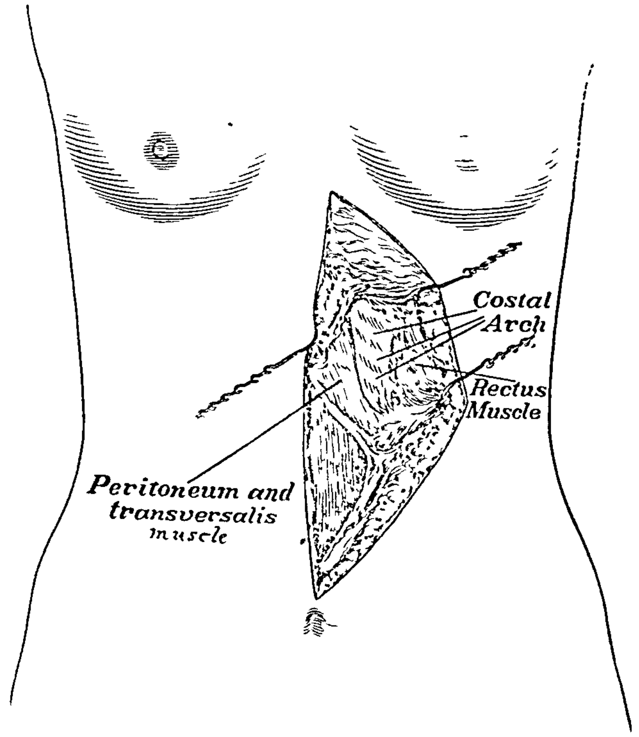


Fig. 13.—Straight median incision. Rectus muscle pulled outward and upward, peritoneum and transversalis muscle inward; costal arch exposed.

The spleen, twelve inches long and seven inches wide, weighing five pounds, when divided showed the typical picture of a secondary (metastatic) multiple tumor (Fig. 16), which, on microscopic examination, proved to be a small round-celled sarcoma.

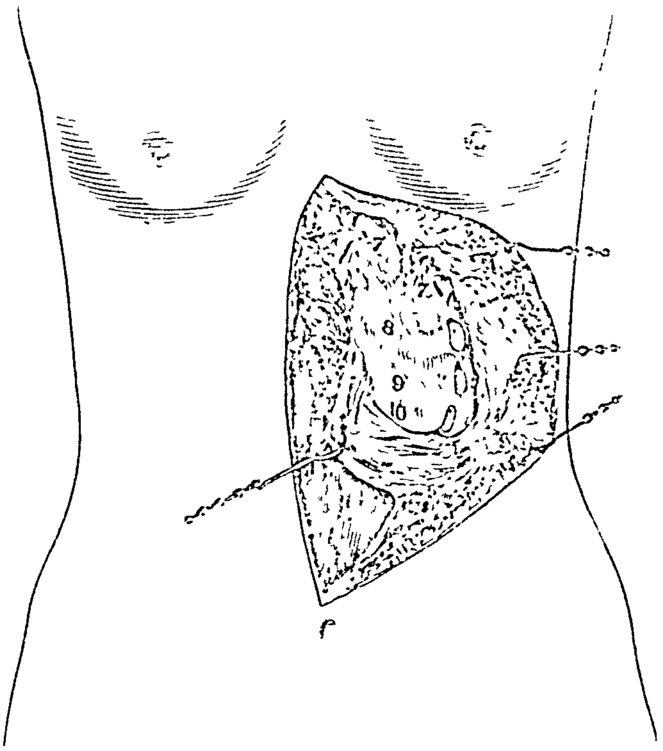


Fig. 14—Straight median incision. Cartilages divided. In this specimen the cartilage of the eighth rib is not united with that of the seventh near sternum.

Of course, with such a microscopic diagnosis there was no hope of the patient's permanent recovery. We tried the *x*-rays, but without avail. He died suddenly, Feb. 26, 1906, ten weeks after operation, as a result of internal metastases. Autopsy showed the costal cartilages to have healed in place without any deformity and with good ligamentous union.

I believe that the primary tumor in this case had developed in the retroperitoneal glands which gradually approached the hilus of the spleen, the growth then perforating into the splenic artery and producing the multiple metastases found. This, at least, is the way I would venture to explain this peculiar dissemination of the disease in only one of the large intra-abdominal organs, and I do so on the basis of an observation I made a few years ago in a patient afflicted with carcinoma of the posterior wall of the stomach. Here the tumor had crept along on the outside of the gastric wall toward the right until it reached the portal vein, which it perforated. Then the blood current continuously took along and carried into the liver carcinomatous particles which produced intrahepatic (localized) metastases in an amazingly short time. The first embolic attack was marked by a chill and acute abdominal symptoms, simulating an abscess of the liver. Exploratory incision and postmortem, seven weeks later, explained this rare pathologic picture.

---

[10] Often the assistant's hands will be found more useful than retractors, as will also be seen in this case later on.

Both cases related above proved the great help we may expect from this osteoplastic raising of the lower part of the thorax, when it becomes necessary to reach ordinarily inaccessible organs within the phrenic convexity. It is natural that in cases of need the ribs may be divided in place of their cartilages, further outward, including also the sixth and fifth ribs. It further is evident that the flap may be shaped according to indication as in Case 1 (Fig. 3). On the right side the surface of the liver can be better reached by pulling on the suspensory ligament (Fig. 10) or by dividing the latter up to its attachment to the diaphragm and then using it for strong downward traction (Fig. 11).

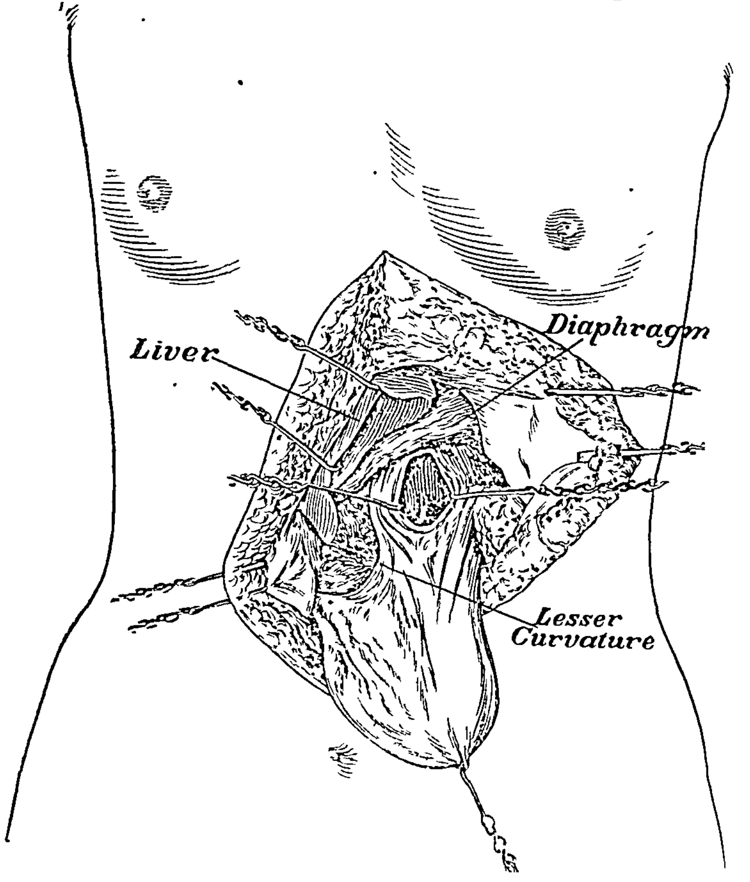


Fig. 15.—Straight median incision. Lumbar region of cadaver raised; skin-muscle-bone flap pulled upward and outward, exposing a large area of the stomach; the cardia incised and cut edges held apart by hooks.

Through the courtesy of Drs. John Rogers and Irving S. Haynes, of Cornell University, I have been able to make some dissections on the cadaver in order to test this operation in combination with the various abdominal incisions that come into consideration: median, oblique and ⊢. The illustrations, representing pen-and-ink drawings made from photographs of the dissections (through the laboratory of Dr. Fred E. Sondern), speak for themselves (Figs. 7 to 17).

From my experiments on the cadaver I have concluded that the usual median (or rectus) incision can well be combined with osteoplastic resection of the costal arch; but, of course, the space gained in connection with this incision is not as satisfactory as when the oblique or ⊢ incision is used. It seems to me that in cases of resection of the stomach, in which the cardiac portion and lesser curvature can not well be pulled downward, but exposure of same is imperative, the additional room gained by dividing the cartilages will make radical work practicable. On the other hand, operations on the spleen or liver, if started by means of a median incision, will require an additional transverse incision. If a careful plan can be laid out beforehand, and it is feasible to employ the oblique incision, this will be found to afford excellent access, after lifting the lower part of the thorax. The resulting wound is not so convenient for closure. Through-and-through sutures are advisable.

Cases in which this osteoplastic operation will prove especially useful are those of injury to liver and spleen (stab- and bullet-wounds, as well as lacerations, due to a blunt force), also injuries and diseases of the diaphragm (hernia) and of the cardiac portion of the stomach. Inflammatory troubles (liver abscess and subphrenic abscess) will be attacked to better advantage, I believe, through or just beneath the complementary space of the pleural cavity after resection of one or more ribs.

As far as I have been able to glean from the literature, osteoplastic resection of the costal arch has as yet received but little attention. It surely means a valuable addition to our operative resources. It renders possible much greater accuracy of work in a field hitherto more or less inaccessible.

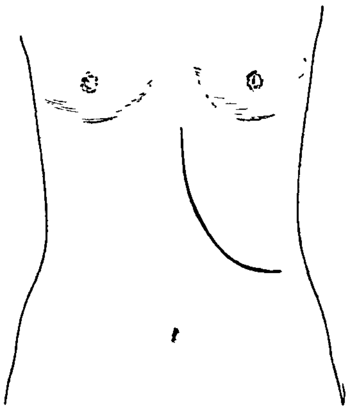


Fig. 16.—Oblique incision from xyphoid process to tip of tenth rib.

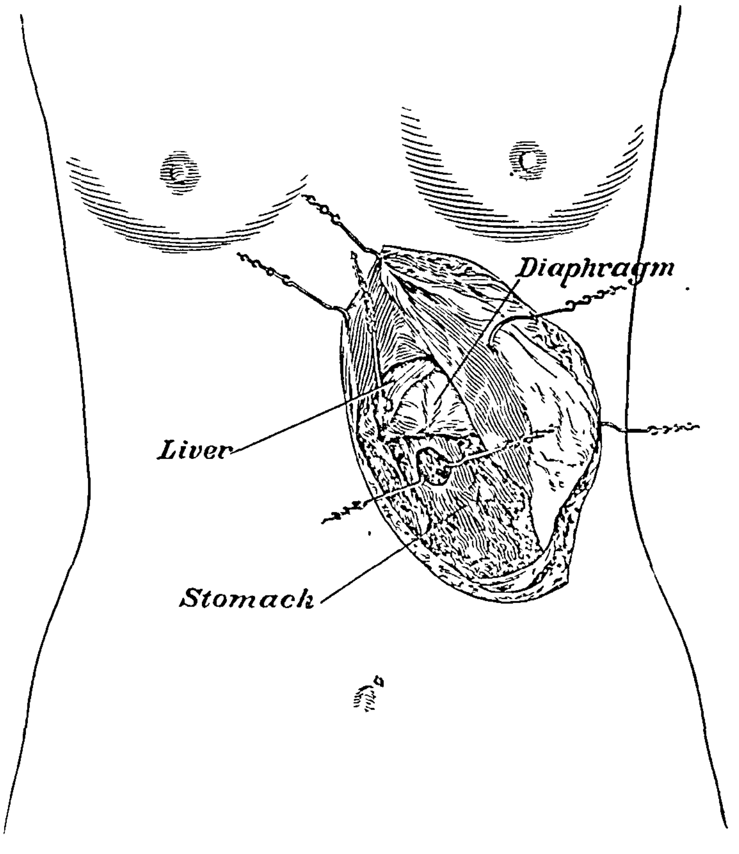


Fig. 17.—Oblique incision. After division of cartilages, as before, osteoplastic flap is raised, exposing vault of diaphragm and cardia. xyphoid process to tip of tenth

DISCUSSION.

Dr. D. N. Eisendrath, Chicago, asked why Dr. Meyer's operation would not be a practical one in the treatment of subphrenic abscesses following appendicitis, those that are situated between the diaphragm and the upper surface of the liver. These abscesses are comparatively common and the only way they can be dealt with at the present time is to go in below the costal arch, following up along the upper surface of the liver, or to go in transpleurally, then there is danger of empyema.

Dr. J. R. Eastman, Indianapolis, believed that Dr. Meyer's method of osteoplastic resection of the cartilages will have an important place in the treatment of gunshot wounds of the upper abdomen, especially those implicating the upper surface and the posterior border of the liver. He cited a case in point. A ball of large caliber passed in at the eighth rib, passing through the pleura, lung, diaphragm and upper border of the liver, causing great laceration and serious hemorrhage at the posterior upper margin of the liver. Cutting through the lowest ribs, he managed to plug in an unsatisfactory way the wounded liver. The patient died. Dr. Eastman thought that if Dr. Meyer's method could have been employed the result might have been different.

Dr. Willy Meyer, New York, stated that subdiaphragmatic abscesses are reached best by the transpleural route or, if possible, just beneath the lower end of the pleura by pushing the latter up bluntly. However, if continuous suture is made on either side of the pleural incision before opening the diaphragm, it is possible to avoid the appearance of a pneumothorax or empyema. Regarding the improved accessibility of shot wounds of the liver, etc., it stands to reason, he said, that by doing this osteoplastic operation we can reach the convexity of the liver equally as well as we can reach the spleen and cardia on the opposite side.

THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS OF THE KIDNEY.*

ARTHUR DEAN BEVAN, M.D.
CHICAGO.

Although Ammor as early as 1833 pointed out clearly the essential clinical points of kidney tuberculosis, it has only been within the last ten years that the diagnosis and treatment have been placed on a sound working basis, and even to-day the frequency and importance of the lesion is not generally understood by medical men. To those of us who have been medical students for twenty-five years or more the evolution of this subject during that period furnishes some interesting reading.

Ebstein[1] reviewed the subject and described the process as a cheesy inflammation involving the kidneys and renal pelvis and ureters, as one difficult to diagnose except in the presence of some evident tuberculous lesion; having a bad prognosis; as a condition in which the patient seldom lived more than a year. Ebstein states that all treatment is apparently hopeless. No suggestion of surgical interference is made.

In 1884 Henry Morris described the condition under the two titles of tuberculous disease and scrofulous disease of the kidney. He gives a very good clinical picture and says the treatment consists in alleviating pain and improving the general health. Further, he says that in tuberculous disease, in which the affection of the kidney is but a local manifestation of a constitutional disorder, nephrectomy would be useless, even if the other kidney were sound. When the scrofulous disease is limited to one kidney, nephrectomy promises much as a means of prolonging life by freeing the individual from a fatal malady.

In 1885 Samuel W. Gross read a paper on the subject of *nephrectomy before the American Surgical Association*, in which he collected twenty cases from the literature in which nephrectomy had been made for so-called strumous kidney, with twelve recoveries and eight deaths. An analysis of these cases showed that but the one kidney was involved in 65 per cent. of the cases, and that in cases in which a previous nephrotomy had been done no permanent relief was afforded by it, and he advises on this account an immediate nephrectomy when possible. Very few of these cases were done in America.

In 1885, in the German Congress of Surgeons, H. Fisher stated that all extensive operative procedures, "especially nephrectomy," for tuberculosis of the kidney should be condemned. In the same year von Volkmann said that he doubted whether operative treatment of tuberculosis of the kidney and kidney pelvis had any real value.

In 1891 Madelung collected sixty cases of nephrectomy for tuberculosis from the literature and reported three *of his own cases*. Eleven died from the operation and five within five months. He concludes that the operation is indicated when we can prove that the process is limited to one kidney.

In 1892 Tuffier reported twenty-five nephrectomies for renal tuberculosis, with 47.8 mortality and with but two definite cures, and fifty-seven nephrectomies, eleven abdominal, with 36.3 mortality, and forty-six lumbar, with 28.2 per cent. mortality.

In 1896 Dr. Willy Meyer,[2] New York, read a paper before the Medical Society of the State of New York, in which he emphasized the important facts that tuberculosis of the kidney is almost always at first unilateral and that it descends from the kidney to the bladder. He brings out clearly the value of the cystoscopic examination in making a diagnosis and calls attention to the peculiar appearance of the mouth of the ureter of the affected kidney. The mouth of the ureter, being indurated, presents a number of circumscribed, clearly defined, inflamed areas of mucous membrane between it and the trigonum. He says: "I could not compare this picture better than to liken it to the footprints in the freshly fallen snow."

He says too much stress can not be laid on the necessity of establishing a strictly defined diagnosis as soon as possible and of carrying out that treatment, which alone is the logical sequence of the same, to-wit: an early extirpation of the primarily diseased kidney.

In a monograph on tuberculosis of the genitourinary organs, published in 1897, Senn advocates nephrectomy, except in the cases in which the surgeon can satisfy himself that the opposite organ is present and in a healthy condition, and he dwells on the great difficulty of obtaining this evidence. Owing to the uncertainty of diagnosis during the early stages of renal tuberculosis and the existence of incurable complications in more than 50 per cent. of all cases, he says that the surgical treatment has not yielded as many permanent results as was anticipated during the early history of nephrectomy for this affection. He pleads for earlier diagnosis and earlier surgical interference.

In 1900 Ramsay, of Baltimore, published in the *Annals of Surgery* an article on renal tuberculosis, in which he collected 304 cases in which some form of operative treatment had been followed. Of these, fifty-five were nephrectomies with fifteen deaths within a month and but four cures. Of 191 primary nephrectomies there were 106 complete cures, thirty-one were improved, thirty-seven died within a month and seventeen later than one month after operation.

---

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Ziemssen's Cyclopedia, 1877.

[2] Meyer, Willy: "The Early Diagnosis of Tuberculosis of the Kidney," Medical News, March 7, 1896.

In 1901 Israel published his great monograph, reporting the kidney cases handled in his surgical clinic. Among these were thirty-one cases of tuberculosis. He made a nephrectomy in twenty-eight, a nephrotomy in two and a resection in one.

In 1903 Kuemmell and Rumpel reported the extensive kidney work of the Allgemeinen Krankenhaus in Hamburg. Among these are thirty-four cases of tuberculosis and among these thirty nephrectomies with twenty-seven cures and three deaths, and four nephrotomies, two deaths and two improved.

In 1904 Kroenlein reported on kidney tuberculosis and the results of operative treatment from his own clinic. He operated on thirty-nine cases of kidney tuberculosis, three times opened perinephritic abscesses, twice did nephrotomy and thirty-four times nephrectomy. He regards nephrectomy for tuberculosis, when limited to one kidney, as one of the most successful operations in surgery.

It is the intention to show in this brief paper that the views on the subject of kidney tuberculosis have changed greatly within the last twenty years, that to-day tuberculosis of the kidney is known to be a common disease, that it is almost always the result of infection through the circulation, that in 90 per cent. or more of the cases it is primary in a single kidney, that it is the duty of the general practitioner to diagnose early these cases and that it is the duty of the surgeon to operate on them early, because an early operation holds out a good prospect of cure. There was a time when the handling of a case of kidney tuberculosis was purely medical. In the enthusiasm of the early successes, surgeons said, tuberculosis of the kidney is a surgical disease and attempted to place the responsibility entirely on the surgeon.

We can say to-day that the responsibility of the successful handling of renal tuberculosis is divided equally between the physician and the surgeon. The physician must learn to recognize these cases early, at the time when the process is still limited, as it usually is, to one kidney; the surgeon must learn that the radical removal of the kidney involved holds out practically the only hope and, fortunately, a very large hope for the patient.

GENITOURINARY TUBERCULOSIS.

Before taking up the special subject of renal tuberculosis it will be necessary to say a word on the subject of genitourinary tuberculosis in general.

Within the last ten years the subject of tuberculosis of the genitourinary tract has been most carefully studied and new clinical and pathologic evidence obtained and carefully analyzed. This has been made possible by additions and refinement in our means of diagnosis. Of these, the careful examination of the catheterized centrifugated urine for tubercle bacilli, pus, blood, etc., the obtaining of the urines from the two kidneys separately by means of various segregators and especially by catheterizing the ureters, more frequent and intelligent employment of the cystoscope and the use of the x-ray and cryoscopic examinations of the blood and the urine and the more systematic histologic examination of tissue removed at operations, must be mentioned as the most important. Tuberculosis of the genitourinary tract, with but few exceptions, begins at one of four points: the kidney, the prostate, the epididymis and the tubes. It is difficult to state which is the most common focus of infection, although evidence has seemed to favor the conclusion that the kidney and the tubes and the epididymis are the common foci and are primary in about an equal number of cases, the prostate occupying the fourth place with a smaller but very considerable percentage of cases.

The kidney, tubes, prostate and the epididymis are as a rule, primary only in the sense that in the individual affected they are the overshadowing and important focus of the disease. They are strictly secondary to a small, unimportant focus in the lymphatic glands bones or lungs, the infection occurring through the blood. Infection of the genitourinary tract through the urethra and vagina, as in gonorrhea, is to be admitted as a possibility, but must, as a clinical fact, be exceedingly rare. Probably the most important practical result that has been obtained from these more recen studies has been the knowledge that primary kidney tuberculosis is exceedingly common, and in probably 9 per cent. or more of the cases is for a time limited t first attacked. The work of Kuemmel Kroenlein, Israel, Si mon, the Mayos and myself h confirmed this fact. This knowledge has changed materially our views in regard to the treatment and nosis of these cases.

When the process is still limited to the kidney first involved, an early nephrectomy gives an excellent prognosis, both as to immediate and permanent results. On the other hand, the lesser operations, which have been so much employed, resection of the kidney and especially nephrotomy, are to be generally discarded. In the light of our present knowledge, resection in kidney tuberculosis has no place and nephrotomy is to be resorted to only as a palliative operation or to relieve urgent symptoms, such as sepsis and pain when the local condition is complicated, as, for instance, with a perinephritic involvement, or when the bad general condition of the patient makes the more radical operation unwarranted at the time. But even in these cases secondary nephrectomy is usually required in order to bring about a cure.

Tuberculosis of the bladder is seldom primary and is secondary to kidney tuberculosis, tuberculosis of the prostate or an extending tuberculosis from the epididymis. The treatment of this condition is still one of the unsolved problems of surgery and is to-day as unsatisfactory as it has ever been, with the exception of the cases of limited involvement of the mucosa, secondary, for example, to a primary focus in the kidney. In these cases it is not infrequently found that after the removal of the primary focus the limited lesion of the bladder undergoes a spontaneous cure. Ascending tuberculosis from bladder to kidney is probably rare.

Tuberculosis of the prostate was formerly believed either not to occur at all or to be exceedingly rare. Our recent studies have shown that primary tuberculosis of the prostate is by no means uncommon and that it forms a distinct proportion of cases of genitourinary tuberculosis.

Tuberculosis of the epididymis is exceedingly common, and when it is primary and limited to this organ radical removal has resulted in cure in about 40 per cent. of the cases. From the epididymis the vas and seminal vesicles and prostate may become involved and later general tuberculosis, or, infrequently, the bladder and kidneys.

Tuberculosis of the tubes is exceedingly common; the process frequently involves the ovary and peritoneum and occasionally the uterus.

Primary tubal tuberculosis rarely leads to involvement of the kidney, except in cases of such widespread tuberculosis that surgical treatment of the kidney would be excluded. In all these forms of genitourinary tuberculosis the great benefits to be derived from the outdoor, open-air and general hygienic treatment must be recognized as of great importance and must be taken advantage of and insisted on in all cases. This becomes very clear when we remember that even in the cases in which there is no evidence or history of a primary focus elsewhere in the body, nevertheless such a primary focus probably does exist and remains even after the radical surgical removal of the focus in the genitourinary tract.

Tuberculosis of the kidney is a common disease. It occurs at all ages, but is most common from 20 to 40 years of age. Women seem to be more often affected than men, about two to one, although on this point there is a divergence in statistics. It occurs in postmortem statistics more frequently as a bilateral lesion.

Report of 12,732 autopsies at Kiel showed that of the cases of renal tuberculosis 62.3 per cent. were bilateral and 37.6 per cent. unilateral.

The *clinical* evidence is different. In Kroenlein's cases 92 per cent. were unilateral and 8 per cent. bilateral. Israel found but 8.3 per cent bilateral. Facklam found but 9 per cent. bilateral. Kuemmell found but 12 per cent. bilateral. Israel concludes that if our attention is called to these cases early we should find 90 per cent. of them unilateral.

In surgical clinics in which kidney fixations are limited to suitable cases tuberculosis of the kidney usually furnishes the largest percentage of any single pathologic process, being more frequent than stone or tumor; tuberculosis of the kidney is frequently found associated with other evident tuberculosis, as tuberculosis of lung, cervical glands, bladder, bones and joints, and genital tuberculosis, as epididymis or tubes. Kidney tuberculosis is sometimes associated with other pathologic conditions, as an old gonorrheal invasion or renal calculus and hypernephroma.

SYMPTOMS.

Renal tuberculosis can and does undoubtedly run at times a silent course, without giving rise to any symptoms even when a single kidney has been entirely destroyed. The most common symptom is an increased frequency of urination. This frequency is seldom very great, unless there is present some degree of cystitis. There may be some pain on urination, but this, where marked, usually speaks for an involvement of the bladder. The patient may notice that the urine is cloudy; pus in the urine and blood in the urine are important symptoms.

In probably 25 per cent. of the cases blood is noted as a symptom. Sometimes a large quantity is found, even sufficient to fill the bladder and to cause an attack of renal colic by obstructing the ureter. More often it is slight or even microscopic in amount; pus is present in varying amounts, not infrequently there being a mixed infection with staphylococcus albus or colon bacillus. In advanced cases the segregator or ureteral catheter may show nothing but pus coming from the ureter, the kidney secreting substances being almost entirely destroyed.

Pain in the kidney region and radiating to the bladder along Poupart's ligament may be present, either as a sense of soreness and a dull ache or an acute attack of renal colic simulating stone and due to the plugging of the ureter with blood or tuberculous débris. When a perinephritic involvement occurs the tenderness and pain characteristic of such a process are present in the costovertebral angle. Temperature occurs in a fair proportion of cases (of the tuberculous type with slight elevation in the evening), or again as exacerbations which come on at intervals and last several days.

In well-marked cases, as in tuberculosis elsewhere, the general evidences of grave constitutional disease, i. e., loss of strength and weight and secondary anemia, are present. A swelling in the kidney region, due either to an enlargement of the kidney or to a perinephritic process, is present in a limited percentage of cases.

The differential diagnosis must be made between other inflammatory lesions of the urinary tract, simple pyelitis and pyelonephritis and kidney stone and neoplasm, and such rare and obscure lesions as the so-called essential kidney hemorrhage and polycystic degeneration of the kidney.

In my own clinic I find that the cases of simple pyelitis and pyelonephritis have been few as compared to the tuberculous cases and the other pathologic processes simulating tuberculosis. As a rule, the simple pyelitis and pyelonephritis sustain about the same relationship to tuberculous infections of the kidney as far as onset and history are concerned as does acute osteomyelitis of the upper end of the femur to hip-joint disease, i. e., there is not infrequently the history of the existence of a preceding suppurative process elsewhere, as a carbuncle, a furuncle or an acute infective process, as a grip or pneumonia, or an infection of the lower urinary tract, and then the sudden acute onset of the symptoms, with chill, temperature and pain, enable one to make the differential diagnosis between an acute suppurative infection and the chronic process of the tuberculosis. When an acute suppurative infection occurs in a tuberculous kidney, which has not been previously recognized, the diagnosis may be difficult or impossible.

In my own work I have been especially interested in the differential diagnosis between tuberculosis, stone, tumor, polycystic kidney and essential kidney hemorrhage. We have been confronted with this problem in sixty cases, in which the pathology was later determined by operation. Of these, twenty-eight proved to be stone, seventeen proved to be tuberculosis, ten proved to be hypernephroma, four proved to be essential kidney hemorrhage, one proved to be polycystic kidney, unilateral.

All of these pathologic conditions may present the following symptoms in common: 1. Blood and pus in urine. 2. Pain in kidney region and attacks of kidney colic. 3. Tenderness in kidney region. 4. Enlargement in kidney region. 5. Bladder symptoms more or less marked. 6. Constitutional symptoms, loss of weight, etc. 7. Slow onset of symptoms and chronic course.

We have attempted to make the differential diagnosis by means of: 1. Careful history and physical examination. 2. An x-ray examination. 3. A careful examination of urine for tubercle bacilli, etc. 4. A cystoscopic examination of the bladder. 5. Cryoscopic examination of the blood.

In the ordinary case, when this differential must be made, we adopt this line of procedure:

1. Several x-rays are obtained, which show satisfactory differentiation of the structures. If stone is found the diagnosis is made; if no stone is found, stone is excluded as a probable diagnosis in our work. The percentage of error in negative cases has been but 3 per cent.

2. In these negative cases, then, the urine is carefully examined for tubercle bacilli. If found, the diagnosis is made; if not found after a week's careful search, tuberculosis is not excluded, because we have failed to find tubercle bacilli in about one-half of our cases.

3. The bladder is then examined and if bacilli have been found the ureters are catheterized to determine whether the process is limited to one or involves both kidneys and the mouth of the ureter is carefully examined.

4. In the cases in which the x-ray is negative and the examination of the urine for tubercle bacilli is negative, and when an enlargement of the kidney exists, the diagnosis of hypernephroma is most probable. We have been able to make this diagnosis in five or six cases on these grounds.

5. We make a cryoscopic examination of the blood, not of the urine, with the belief that in hematuria if the process is limited to one kidney we shall find the normal freezing point of — 0.56; if both kidneys are involved and kidney insufficiency exists, the cryoscopic examination will show — 0.60 or above.

Following the above methods, in this list of sixty operations we have been able to make the correct diagnosis in more than fifty cases. In only six or eight were the operations begun as exploratory operations.

TREATMENT.

The treatment of tuberculosis of the kidney depends to-day entirely on the facts as to whether one or both kidneys are involved. As already pointed out, in 90 per cent. or more, the process is an infection through the circulation and is limited to one kidney.

In these cases, there is but one operation to consider and that is nephrectomy, the removal of the diseased kidney. If, because of the existence of a mixed infection, the patient's condition is such as to make an immediate nephrectomy out of the question, a nephrotomy with drainage should be made simply as a palliative operation and with the understanding that, as soon as the condition of the patient permits, a radical operation of nephrectomy should be made.

A resection of the kidney is to be practically discarded from consideration. The multiple foci, which are disclosed by a careful examination of all the tuberculous kidneys removed at operation, show how useless such a procedure is.

When both kidneys are involved, the treatment must be nephrotomy and drainage in cases in which there are large abscesses, and the fresh-air and outdoor treatment of widespread inoperable tuberculosis.

OPERATIVE TECHNIC.

In uncomplicated and early cases a nephrectomy for tuberculosis presents few difficulties. An oblique incision, extending from a point a finger's breadth below the last rib and just external to the erector-spinæ muscles, is carried downward and outward to a point a finger's breadth above the crest of the ileum. This divides the skin, superficial fascia, latissimus dorsi muscle and the layers of the lumbar fascia down to the fatty capsule of the kidney. This incision runs about parallel with the lumbar nerves and these, as a rule, can be avoided. The kidney is entirely freed from its surroundings and brought outside of the wound. The ureter is ligated separately from the vessels. The vessels are double ligated with middle-sized catgut. The inside of the mucosa of the ureter, distal to the ligature, is cauterized with pure carbolic acid.

For a time it was believed that it was very necessary to remove the entire ureter. More recent experience seems to show that this is unnecessary and that the ureteral mucosa, even though involved in the disease, gradually recovers after the removal of the primary foci in the kidney proper. The external wound is closed with the exception of a cigarette drain carried down to the stump of the ureter and the great vessels. This is removed at the end of forty-eight hours.

RESULTS.

I know of no more satisfactory results in the whole field of surgery than those which are obtained by an early nephrectomy in unilateral kidney tuberculosis. With this fact established, it becomes our duty to make it more widely known and to plead for early recognition and early radical operation for kidney tuberculosis.

On the seventeen patients which I have handled surgically for tuberculosis, 21 operations were performed, 12 nephrotomies, 7 nephrectomies, 1 opening of a perinephritic abscess and 1 resection. Nephrotomy was made in most of the cases in my earlier work. None of these proved curative. The same result followed in the single resection which was performed. The histories of the seven nephrectomies have been very satisfactory. They have all recovered from the operation, except one, and have been apparently entirely cured.

The one fatal case is a case in which a nephrotomy had been done with a slight temporary improvement. A nephrectomy, which was performed later, was made extremely difficult by the extensive perinephritic inflammation, which resulted from the first operation. An ill-advised attempt was made to remove the kidney with its capsule. This made the operation very bloody and very prolonged, the patient dying of shock within a few hours. Since that time we have saved similar patients by removing the kidney from within the fibrous capsule, when the perinephritic adhesions are dense, which is a much easier and safer procedure and seems to give very satisfactory results.

DISCUSSION.

Dr. Van Buren Knott, Sioux City, Iowa, stated that the old surgical conceptions and ideas of the pathology of renal tuberculosis gained from postmortem records are being constantly revised by antemortem or operation statistics. It was commonly believed only a few years ago that kidney tuberculosis was an entirely hopeless affection; that surgical treatment did not offer anything very satisfactory in the way of results; and time and again the pendulum swung back and forth between medical and surgical treatment. Postmortem records nearly always showed bilateral disease of the kidney, when in nearly every instance kidney tuberculosis is primarily unilateral. A descending infection may and very frequently does occur; the bladder becomes involved, and if the case is neglected and is allowed to go on for an unreasonable length of time, it is only a question of months before the second kidney is involved. This being true, the duty of the physician is very clearly outlined. The patient should have not only dietetic and hygienic treatment, as recommended by the physician, but surgical treatment as well.

The diagnosis is of extreme importance. It is only by early diagnosis that proper treatment can be instituted. This is another one of the diseases where the only treatment that can accomplish anything is that which is instituted early. The use of the cystoscope in these cases is of the greatest assistance, although frequently cases are encountered where its use is very unsatisfactory. With a tubercular contracted bladder, the use of the cystoscope at times is extremely difficult, and catheterization of the ureters, or of one ureter, has, in some instances, been found to be a difficult procedure. In some cases it has been necessary to expose the second kidney, making a definite diagnosis of the condition existing in the kidney known to be diseased. As a rule, it is a reliable method of determining the condition of the other kidney before attempting to do a nephrectomy on the diseased kidney. Dr. Knott had one unsatisfactory occurrence. After removing the kidney the patient's condition became alarming and death ensued. The second kidney, which had been supposed to be healthy, was found to be in an advanced stage of tuberculosis. So that even inspection of the second kidney does not always lead to the safest results.

As to cystoscopic pictures of the bladder, he has been able many times to find conditions made plain by finding advanced congestion in the neighborhood of the ureter. Dilatation of the orifice of the ureter is typical of kidney tuberculosis, and in most instances the catheterization of that ureter will not be necessary, as such a dilated orifice speaks sufficiently loudly for tuberculosis of the kidney.

Nephrotomy, he believes, was justly condemned by Dr. Bevan as a palliative operation. The attempt to conserve any portion of the kidney tissue is a mistake. He has had two cases in which attempts to conserve partially tuberculous kidneys by resections of a small portion of the viscus were followed by results which made resection of the whole kidney necessary. He emphasized that the treatment of tuberculosis of the kidney is now in the critical stage and that the future of this treatment will depend on the early recognition of the disease and the immediate institution of a radical operation, which in all instances should be nephrectomy when the disease can be located and is confined to one kidney.

Dr. Howard A. Kelly, Baltimore, said that his experience with tuberculosis of the kidney covers about 49 or 50 personal cases, and a considerable additional number of cases in the hands of his associates, Drs. Hunner and Cullen. He has found that tuberculosis of the kidney is a very common affection. He was interested to know the frequency in which tubercular lesions in other regions are found in these cases. Very often the patient has had a tubercular joint lesion of an obscure or a manifest nature; or there have been lesions in the glands or in the bones; or, sometimes, a latent pulmonary lesion. The history of these cases always should be gone into very carefully.

In women the disease is almost always primary in the kidney. Dr. Kelly has never met with a case suggesting an ascension from the bladder to the kidney, nor does a clearly proven case exist in the literature. In men, where bladder tuberculosis originating from a testicular tuberculosis is common, as compared to the frequency of bladder tuberculosis without kidney involvement in the woman, it may occur. It is possible to picture an involvement of the vesical end of the ureter leading to stricture of same and a consequent hydroureter above, thus producing conditions favorable to the tubercular ascension. While granting the possibility of such an occurrence, it must be kept in mind that clinical autopsy and experimental facts all speak for its rarity. In women it is always of great importance to investigate the condition of the genital organs. There is a common association between renal tuberculosis and tuberculosis of the uterine tubes and even of the uterus itself. He has had several such cases. The first two or three came as surprises, but lately he has been looking out for them very carefully. Dr. Kelly had a patient who had a pelvic tumor and tuberculosis of the right kidney. When he opened the abdomen he found a disseminated tuberculosis, the peritoneum looking as if it had been peppered. He took out the much-involved pelvic organs, after which he did a right nephro-ureterectomy. The association of tuberculosis with hydronephrosis is remarkable, particularly with stone. The first case of this kind he saw was a patient whose physician had removed a kidney stone. Several years later she had tuberculosis in the same kidney and it was removed.

As to the diagnostic signs, it is not the common ones which demand attention, but the uncommon ones. Pain is not always a satisfactory sign, for the patient may have pain in the wrong side. The size of the kidney may be misleading, because a normal kidney may be hypertrophied. Tubercle bacilli in the urine can be demonstrated in some cases of pulmonary phthisis, without renal involvement, particularly if the twenty-four hours' urine is examined. Dr. Kelly also referred to a tubercular case in which the woman had been advised to have the wrong kidney taken out because it had a large ureteral orifice on that side. He has a patient with tuberculosis of the urinary tract, who had a golf-hole orifice on one side and a large red ureteral orifice on the other. He felt sure that the former was the affected side, but when he cut into the kidney there was no disease. He then cut into the other kidney and there also was no disease. It was a case of primary tuberculosis of the bladder with these interesting signs.

He noted the very common occurrence of stricture of the ureter in these cases. In two early cases he was misled and sent the patient back to her physician with a diagnosis of stricture of the ureter. She undoubtedly had the stricture, but it was due to tuberculosis of the ureter above the strictured portion. Nephrotomy, he said, may be necessary as a temporary means to relieve the patient, but nephrectomy must follow. Resection should not always be urged because Morris took out a kidney on one side and then the patient developed tuberculosis in the other kidney. He did a nephrectomy and four years later the patient was in good health and able to work at service.

Dr. Willy Meyer, New York City, believes that tuberculosis of the kidney is a very common disease, much more common than it has been thought to be in former years. The principal point is to make the correct diagnosis. It must be of value to have some more or less distinct clinical symptoms which will cause the surgeon to suspect the disease. Pain is a very important sign; but, according to his experience, a far more significant symptom is that of frequent urination with tenesmus (sometimes appearing in distinct attacks) not only during the day, but during the night. If a younger patient says that he has frequent urination, both during the day and during the night, that he has had renal colics with pus and blood in the urine, he at once suspects primary renal tuberculosis, especially if there has been no gonorrhea and the patient has never been subjected to intravesical instrumentation. If tubercle bacilli are then found in the urine, the diagnosis is established. In order definitely to locate the disease, he insists in these cases on cystoscopy. Of course, the bladder is here frequently contracted and irritable, and there is a great amount of catarrh, etc., but, if one will take the trouble to carefully irrigate the viscus, preferably with a weak bichlorid solution, after due cocainization, he will soon be able to introduce a sufficient amount (three ounces) of boric-acid solution to permit of a cystoscopy. If in such a case he sees the mouth of one ureter healthy and that of the other injected, or rather ulcerated, he diagnoses unilateral descending tuberculosis. He considers this cystoscopic picture the most important pathognomonic sign in determining which side is diseased. It is of greater value than unilateral pain.

Dr. Meyer fully agrees with Dr. Kelly that pain is sometimes misleading. In one of the cases observed by him, the patient complained of constant pain on one side, tubercle bacilli were found and he thought the diseased kidney would be on the painful side. He did cystoscopy and there was pronounced ulcerative catarh. The picture was blurred. He treated the man for a week or two and then repeated cystoscopy. He found an ulcerated ureteral mouth on the other side, and the one corresponding to the painful side was healthy. On the basis of this finding he diagnosed primary renal tuberculosis of the opposite side and cut down on that kidney. It proved to be the seat of the disease and was removed. The patient is well to-day.

Catheterization of the ureters can be dispensed with in the majority of these cases. If recurrent attacks of pain are located on the side that shows the ulcerated mouth of the ureter, and if tubercle bacilli are found, the diagnosis is still more firmly established. Therefore, in suspicious cases, the cystoscope should be used as soon as possible. If the mouth of one of the ureters is ulcerated, there is a descending tuberculosis. If the mouth of neither ureter is ulcerated, but if pyelonephritis is made out by urinary analysis, and tubercle bacilli are found, there is an ascending tuberculosis

The kidney which is diseased should be removed, and the earlier it is removed, the better. Then send the patient out into the country, into the mountains, if possible. Let him benefit from hygienic régime, after he has had surgical treatment.

Dr. Joseph Ransohoff, Cincinnati, stated with regard to ascending tuberculosis of the kidney that there is such an occurrence as the result of a primary disease of the vesicles, the prostate or the testicles, with secondary involvement of the bladder. Otherwise it is always a descending tuberculosis. A non-motile bacillus can not travel up stream. Tuberculosis of the testicle is always an ascending tuberculosis from the epididymis running toward the prostate. He said that he understood Dr. Kelly to say that very frequently in women tuberculosis of the kidney is associated with tuberculosis of the genital tract. There is one thing that calls attention to the fact that tuberculosis is descending when coming primarily from the kidney, and that is, that tuberculosis of the kidney occurs as often in women as it does in men, and in women it could not have any association with the genital tract and become an ascending affection. Tuberculosis of the kidney must be kept absolutely separate and distinct from tuberculosis of the genital tract, in the male as well as in the female. Dr. Ransohoff said that some years ago he read a paper before the American Surgical Association on the treatment of tuberculosis of the kidney, and called attention to the fact that nephrotomy ought not to be done as a final operation. On that occasion he did report one case of partial resection, and that patient had done well since, but it ought not to be done often. Quite recently he had a tubercular kidney for removal. One of his assistants suggested that he save the kidney, taking out only the one pole that was involved. He made a section of that kidney and there were minute deposits in the cortical substance that would certainly have given rise to trouble later on.

He invariably makes a laparotomy to determine whether or not the other kidney is there. If it is in the right place, feels right and is of the right size, he takes it for granted that the kidney is doing its work right. If it is not, God help the patient. Even catheterization of the ureters and cryoscopy will fail sometimes to aid in making a correct diagnosis. The individual case must decide what operative procedure is to be adopted.

Dr. E. W. Lee, New York, referred to the case of a young man who two years ago received an injury to the testicle while playing football. Dr. Lee removed both testes because they were tubercular, and now that young man is suffering from tuberculosis of both kidneys, which has been demonstrated conclusively by catheterization of the ureters.

Dr. L. L. McArthur, Chicago, thinks it a mistake to let the dictum go out that all tubercular kidneys should be removed as soon as the diagnosis is made. That is, it would be a mistake to advise or to counsel the profession to remove kidneys affected with a severe mixed infection, from which the patient has been suffering for weeks, and is in practically a septic condition. Under these circumstances it is perfectly justifiable, and this is borne out by practical experience, to first drain that kidney, let the fever subside and restore the patient to good condition. Then perform the nephrectomy, but not until then.

The New Public Hospital at Berlin.—The great Rudolf Virchow Hospital is nearing completion. The total expense has been nearly $5,000,000. There are 57 separate buildings with 3,400 rooms, exclusive of the basement. The capacity of the hospital is 2,000 beds, divided as follows: 564 beds in the 11 buildings of the surgical service; 500 beds for the 10 buildings for internal medicine; 95 each for the obstetric and gynecologic wards; 11 beds for septic cases; 24 for the quarantine building; 34 for the diphtheria pavilion; 120 in the 4 infectious diseases pavilions; 18 beds for unruly patients, and 374 for males with venereal disease, with 146 for female cases. Some of the buildings have been in use for some time, the museum even before Virchow's death.

SODIUM CITRATE IN INFANT FEEDING.*

A. C. COTTON, M.D.
CHICAGO.

The infant deprived of the breast must, in relation to his feeding, be regarded as a pathologic problem. That this statement is axiomatic is shown by the fact that more earnest work has been bestowed on infant feeding during the past twenty years than on all other pediatric subjects combined. That the problem is still unsolved the high relative mortality and later morbidity of artificially fed infants bear constant witness.

The six essentials of Cheadle, enunciated by that observer some time in the '80s, bear witness that the essential requirements of an artificial food for babies were broadly understood 20 years ago. Quoting from memory, they are briefly as follows: 1. Sterility. 2. Antiscorbutic property. 3. Quantity. 4. Some animal constituents. 5. Form suitable. 6. Constituency. Much has been learned since Cheadle by amassing clinical results and observations. Meanwhile the deductions from *a priori* reasoning have proven unsatisfactory for the simple reason that so little was known of the physiology of infant digestion. Latterly the premises from which we reasoned have been proven, almost without exception, to be incorrect.

Thus the great American experiment known as the exact percentage method of feeding required that the baby's diet should consist wholly of cow products and water, so modified in its five gross constituents as to coincide quantitatively with similarly named constituents of average breast milk. One other ingredient only was allowable in this feeding mixture, viz., some alkalin solution, as lime water, sodium bicarbonate or magnesia. This dogma, which in connection with laboratories established throughout the country had almost become a cult in infant feeding, was practically based on seven assumptions, which have recently been proven erroneous, to wit:

1. The qualitative similarity in breast and cow's milk of the lactose, fats, albuminoids, proteids and their chemical combination with the milk salts.
2. The claimed alkalinity of breast milk in contradistinction to the acidity of cow's milk.
3. The possibility of a synthetical substitute for breast milk from cow products alone.
4. The claim that cereals were not allowable because indigestible in the infant's secretions and that they induced dyspepsia and intoxication by acting as decomposing foreign matter.
5. That cereal gruels were no more efficient in the prevention of dense milk coagula than dilution with plain water.
6. That HCl played no part in the digestive process until later infancy.
7. That the important proteid content of the baby's food could be made up from the non-coagulable whey albumin of cow's milk.

The elucidation of facts in refutation of these premises is due to the earnest work of a number of men, prominent among whom as members of this association may be mentioned Chapin on cereal gruels and gastric development, Kerley on milk reaction and alkalinization, Shaw on HCl secretion in infants, Stern on milk fats, Southworth on the art versus the science of infant feeding, Morse on acidified milk and buttermilk feeding, and the recent unsurpassed work in chemistry of milk by Van Slyke and Hart at Geneva. Most of these contributions have enriched our literature and become familiar to all. The subject is still a broad one. I disclaim any intention of attempting in this limited paper to deal with it *in toto* and indulge in these preliminary observations merely to emphasize the fact that no royal road to successful feeding by exact mathematical formulas has yet been found. Nor do I wish to convey the impression that I would belittle the value of attempts at accuracy in determining the component parts of the infant's dietary.

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Great credit is due and will ever be associated with the name of Dr. Rotch as the founder of a system which has not only served as an hypothesis for tentative feeding, but has stimulated to greater accuracy and more careful clinical observation and recording of results than was possible by any other method. As an enthusiastic advocate of the so-called American method, I am on record frequently both at home and abroad. I may be pardoned if I suggest that the tendency in general is too much along the line of the refinement of mathematical formulas to the neglect of the obvious importance of gastric development along normal physiologic lines.

The spectacle of a marantic infant with persistent curds in the stools, though cow proteids have been reduced to the extreme limit of attenuation by dilution with water, is a familiar one. So, also, too commonly in evidence is the child fed long, but not nourished, on whey proteids and cream whose gastric vigor has not progressed beyond that of early infancy.

Important as the rôle of carbohydrates and fats in infant development may be and difficult as the problem of properly dealing with fats is, it is to the management of the proteids that I beg to call your attention in the few minutes allowed. Their importance in the nutrition of the child needs no emphasis, as it is universally accepted both theoretically and clinically.

The intolerance of the infant's digestive organs to cow proteids, so widely different from those for which they were intended, is also well known. Of the many methods in vogue for the establishment of toleration of these refractory curds the one most common, unfortunately, is their quantitative reduction by dilution far below percentages absolutely necessary for the development and growth of the child. In fact, the common advice to infant feeders on percentages of milk in recognition of its refractoriness is either to restrict the proteid percentage far below that which is known to obtain in average breast milk (as though Nature would commit the absurdity of elaborating the necessary amount of proteid from even a less quantity when presented in the more obstinate form of cow casein), or to substitute the non-coagulable proteids of whey.

In either case Nature is cheated of her absolute demands. The pathetic malnutritional results of low proteid feeding, both immediate and remote, are too familiar to us all to need further elaboration. Aside from this slow starvation and stunted growth with its diminished resistance to intercurrent disease from insufficiency of nitrogenous food, abundance of proteids is demanded in a coagulable form for the normal development of the gastric function, as ably shown by Chapin and corroborated by a host of clinical observers. This the infant gets at the mother's breast in proteids which clot on admixture with the gastric contents in soft, flocculent, semi-solid coagula which readily pass the pylorus in a form suitable to intestinal digestion and absorption.

The important question, then, in feeding cow's milk is not how to reduce the proteids and sustain life, but how to *increase* the proteids and maintain unimpaired digestion. Buttermilk has been tried; acidulated milk has been tried; admixture with gruels has been tried; koumiss, matzoon and kephir milk have been tried; the addition of various alkalies is much in vogue; all with varying degrees of success, and each measure has its ardent advocates. That the question is not yet settled this diversity of opinion amply indicates. It is still an open field, and the cry that no chemical tampering with the milk should be encouraged need deter no one, since it is proven beyond dispute that cow's milk, however modified, is not a natural food for the human infant. The more orthodox observers of the original laboratory percentage modification have from the first chemically tampered with the milk in the addition of lime water, sodium bicarbonate, etc., in the mistaken notion of humanizing the mixture by rendering it alkalin. That we reached further than we intended in our administration of alkalies and secured toleration of the curds through neutralization of the normal gastric acids does not lessen the evils of inhibition of those digestive processes which can occur only in an acid medium.

Since deductive methods from *a priori* reasoning have thus far failed of a satisfactory solution of this problem, let us welcome inductive methods conducted along rational lines, since massed clinical evidence must ever be the tribunal before which all methods must come to trial. Whether *secundus artem* or *secundus scientiam,* it is the greatest number of babies who live and thrive and resist disease that demonstrates the merits of their hygiene.

AUTHOR'S EXPERIENCE.

It is with the firm conviction that sodium citrate, through its inhibition of dense coagulation of cow's milk in the presence of an acid and rennin, may prove valuable in the solution of the proteid problem that I present a brief résumé of my experience with this agent.

More than two years ago in a personal letter from one of my assistants, Dr. J. W. Vanderslice, who was studying abroad, my attention was called to this use of sodium citrate. The reports from Dr. F. J. Poynton's clinic at Great Ormond Street, London, from which the writer as an eye witness drew his conclusions, seemed sufficient to justify a careful consideration of this new method of overcoming some of the obstacles in the adaptation of cow's proteids to infant digestion.

Rather cautiously, I began prescribing the citrate in cases in which varying milk mixtures had been used with poor success. Later, as I found that infants would tolerate a larger proportion of the milk in the feeding mixture when citrated than by any other modification known to me, I used it more boldly, so that during the past two years I find a record of its employment for a longer or shorter period in more than 50 cases in both hospital and private practice. I have here, by the courtesy of Dr. J. D. Merrill, a report of 8 cases in which she has carefully observed its effects for a considerable time, also by the courtesy of Dr. Vanderslice a history of 29 cases reported by him at different times to the Chicago Pediatric Society. In addition to this I have read carefully Dr. Shaw's[1] report of 22 cases, making a total of 112 cases embracing nearly all conditions from simple dyspepsia to marasmus and ranging in age from the new born to adults who have suffered from milk dyspepsia.

---

[1] Shaw: Arch. of Pediatr., March, 1906.

Sodium citrate being very soluble in water, the method of employment is simple, as follows: An aqueous solution is ordered containing from 1 to 5 gr. to the dram. A quantity of this solution is furnished the mother or nurse with instructions to add to the baby's bottle immediately before feeding enough of the solution to represent 1, 2 or even 3 gr. of the citrate to each ounce of milk in the feeding mixture, according to the prescriber's idea of the requirements. The feeding mixture may consist of varying dilutions of milk with water or gruel with the addition of cane or milk sugar, with or without cream. No alkalies are added, the sodium citrate used being a neutral salt. A most noticeable feature in this method of feeding is the large proportion of milk in the feeding mixture that the infant will tolerate without evidence of gastric disturbance or the appearance of any considerable amount of undigested casein in the stools. In fact, the stools of babies fed on citrated milk have come to be regarded by Drs. Merrill, Vanderslice and myself as positively characteristic, being firm enough to show form on the diaper, free from fecal odor and homogeneous in color and consistency. The slight tendency to constipation mentioned by Dr. Vanderslice I have observed in a number of cases in which I attributed it to the low percentage of fat in the food, consisting of equal parts of milk and water or even one part of milk to two of water. In but few instances have I observed this constipation where the fat contents of the mixture equalled 3 per cent.

One indication for the increase of the sodium citrate, even in some cases to as high as 3 gr. to the ounce of milk, is vomiting of curds. Another indication is the appearance of curds in the stools, care being taken to exclude indigestion from excess or intolerance of fats. Of the stools, J. H. Salisbury, professor of chemistry, to whom they were submitted, reports as follows:

> Three samples of the feces of infants fed with milk modified by the addition of citrate of sodium were examined. The feces were yellow, of a moderately firm consistence and remarkably homogeneous. On microscopic examination a few round masses, probably calcium soaps, could be seen scattered through the otherwise very fine débris. In two specimens short crystals of soaps could be detected. No free fat was found. On treatment with acetic acid more or less acid crystals could be observed and in one specimen this was especially marked. Chemical examination of one specimen for proteids was negative.

The duration of the administration of the sodium citrate, as well as the quantity employed, varies considerably in different cases, the purpose being to bring the baby's feeding up toward whole milk as rapidly as possible. As toleration is established the amount of citrate is reduced to one, to one-half and to one-fourth of a grain per ounce of milk until it can be discontinued. It happens not infrequently that the citrate is profitably resumed on the recurrence of signs of indigestion. In but 6 cases have I felt obliged to discontinue the citrated milk and adopt other methods of feeding. Some of these were among my early cases which, if occurring later, would possibly have received a more persistent treatment with citrated milk.

In consideration of this subject three questions naturally arise: 1. Is the employment of sodium citrate any better than other methods of rendering cow proteids tolerable and digestible? 2. Is its employment harmful? 3. In what manner does it act?

In answer to the first I would say that this method seems to allow a more rapid increase in the proportion of milk ingested than any other known to me. Moreover, the frequency of relief from milk indigestion on the addition of the citrate and the favorable reports from all whom I have known to give it a thorough trial are not without significance. In regard to its harmfulness no case of citrated milk feeding has been brought to my attention in which there appeared to be cause for regret bcause of the employment of this method.

Concerning its manner of action in a chemical sense there appears to be some difference of opinion. Professor Salisbury, above quoted, to whom the question was submitted, states as follows:

> Citrate of calcium is insoluble in water, but dissolves readily in solutions of the alkali citrates. It is to be presumed, therefore, that when a solution of sodium citrate is added to milk which contains calcium in combination with casein a reaction would occur producing a sodium combination of casein and an insoluble calcium citrate. The latter would dissolve on the addition of an excess of sodium citrate. It is to be presumed, therefore, that the milk treated with citrate of sodium contains a sodium compound of casein and calcium citrate held in solution by the presence of sodium citrate. Such milk would not yield a curd containing an excess of calcium, but the calcium would be found in the whey as well as in the curd. The experiments of Dr. R. Aibinder do not contradict the theory of Poynton that sodium citrate acts by separating the calcium from the casein, thus rendering it less easily coagulable. Sodium citrate would react with hydrochloric acid solution to form sodium chlorid and citric acid. The decomposition would not be complete but so nearly so that a large quantity of sodium citrate would neutralize nearly all the free hydrochloric acid of the gastric juice. Too large an amount of sodium citrate in the milk might, therefore, interfere with the digestion of proteids in the stomach. Such digestion might occur in the intestine from the action of the pancreatic juice.

The physical behavior of citrated milk *in vitro* is obvious and may be demonstrated in a simple manner suggested by Wright and Poynton, who first exploited this method of feeding. Into each of two test tubes containing equal quantities of milk (to one of which sodium citrate has been added) drop a given quantity of liquid rennet and dilute HCl. In both milks coagulation occurs; with this difference, that the citrated milk clots less promptly and the resultant curd is softer, less dense, more nearly resembling the curd of breast milk.

DR. ALLIN'S EXPERIMENTS.

My assistant, Dr. F. W. Allin, as the result of more than a hundred careful comparisons, has obtained the following results:

Materials Used.—Ordinary dairy milk was used in these experiments. Wyeth's liquid rennet was used for curdling agent, which was always added last. A 1 per cent. hydrochloric acid solution and 4 per cent. sodium citrate solution was used. Two drops of HCl in 5 c.c. milk equals .025 per cent. Five drops of sodium citrate solution equals .25 per cent. One grain of sodium citrate to the ounce of milk would be .20 per cent. The gruels were standardized to one ounce of flour or oatmeal to the quart of water and cooked three hours in a double boiler.

Conditions.—The experiments were all performed at 40 C. in glass test tubes. The milk was used as whole milk or diluted with water, flour gruel or oatmeal gruel. The dilutions made were two-thirds, one-half, one-third, one-fourth, one-eighth milk.

Results.—All experiments were repeated many times. The accompanying summary is a tabulation of results. The time recorded is the average of the results.

CONCLUSIONS

1. Sodium citrate in .25 per cent. or more retards, and very high percentages will inhibit coagulation.
2. The presence of HCl hastens coagulation.
3. Diluting milk generally retards coagulation.
4. Gruels appear to have little or no effect in retarding coagulation more than water when the citrate is used.
5. The coagula of citrated milk are softer, smoother and more jelly-like or more flocculent than those of milk not thus treated.

EXPERIMENTS WITH CITRATED MILK.

WHOLE MILK.

Milk. c.c.	Liquid Rennet. m.	HCl. 1% m.	Sod. Cit. m.	Time. min.	Curd.
5	5	2	0	3	Solid, firm.
5	5	2	5	9	Solid, soft.
5	5	0	0	5	Solid, firm.
5	5	0	5	15	Solid, soft.
5	5	2	1	4	Solid, firm.
5	5	2	2	4½	Solid, firm.
5	5	2	3	5½	Solid. firm.
5	5	2	4	7	Solid, softer.
5	5	2	10	12	Flocculi, no curd.
5	5	10	0	1	Solid. hard.
5	0	20	0	. . . . .	No curd.
5	0	20	5	. . . . .	No curd.
		HCl. 5%			
5	0	1	0	1 hr.	0
5	0	2	0	"	0
5	0	3	0	"	0
5	0	4	0	"	0
5	0	5	0	15	Small flocculi.
5	0	10	0	15	Few flocculi.

DILUTED MILK.

Milk.	Liquid Rennet.	HCl. 1%	Sod. Cit.	Dilu-ent.	Time.	Curd.
⅔	5	2	0	Water.	3	Solid, firm.
⅔	5	2	5	Water.	5	solid.
⅔	5	2	0	Gruel.	3	Solid, firm.
⅔	5	2	5	Gruel.	20	No change.
½	5	2	0	Water.	3	Solid or co'rse granular.
½	5	2	5	Water.	7	Solid.
½	5	2	0	Gruel.	3	Solid, firm.
½	5	2	5	Gruel.	20	No change.
½	5	2	2½ c.c.	. .	0	No change.
½	5	0	0	Water.	12	Soft, solid.
⅓	5	1	0	Water.	5	Granular.
¼	5	2	0	Water.	5	Hard, granular.
¼	5	2	5	Water.	5	No change.
¼	5	2	0	Gruel.	4	Granular or solid.
¼	5	2	5	Gruel.	0	No change.
⅛	5	2	0	Water.	6	Small solid.
⅛	5	2	5	Water.	0	No change.

The simplicity of this method commends it, especially in dispensary and out-patient practice where the mother's demand for "medicine" for the baby's dyspepsia may be met by the standard solution of sodium citrate to be administered in teaspoonful dose in each bottle of the feeding mixture. In private practice it furnishes another rational method of infant feeding.

1485 Jackson Boulevard.

The province of the doctor is to relieve the sick and suffering and to subordinate to that first object of his calling the obtaining of a financial reward for his labor. "Do your duty and then collect your money" is the physician's motto. "Be sure of your money before you deliver the goods" is the perfectly proper motto of the business man.—John B. Roberts.

THE TREND OF PEDIATRIC OPINION CONCERNING THE ARTIFICIAL FEEDING OF INFANTS.*

THOMAS S. SOUTHWORTH, M.D.
Attending Physician, Nursery and Child's Hospital, New York City Children's Hospitals and Schools, Physician Out-Patient Department Babies' Hospital.
NEW YORK.

The artificial feeding of infants elicits to-day from our profession an even keener interest than at any time in the past. As a practical science it is making continual progress. A satisfactory working hypothesis having been established some years ago, the spirit of inquiry is now engaged in proving this structure and examining the principles on which it rests. Those portions which do not stand the test are being rapidly replaced by sounder material. Our labor in this direction is far from completed, but it may not be amiss at this time to review somewhat briefly the trend of pediatric opinion concerning certain of these important questions and to recount some of the recent advances.

Foremost among these, because the most fundamental, has been the recognition forced on us by the study of the comparative anatomy and physiology of mammalian species, that milk must be the basis of an infant's food, because milk proteid is alone capable of forming, with the secretions of the stomach, the soft solids requisite to such development of that organ as to fit the infant later for subsistence on the mixed diet of the adult. Cow's milk is the only milk at present obtainable commercially in sufficient quantities to meet the needs of the really appalling number of infants who for valid or in-valid reasons are deprived of their normal food from the maternal breast. Some of our chief problems of infant feeding have centered, therefore, about our efforts to adapt this milk of a foreign species to the infant's digestion. The inherent differences in the caseins of cow's milk and human milk and the size and character of their curds formed in the infant's stomach enhance the difficulties. Practically all methods of preparing milk for the infant which are of real value, including some of proprietary origin, have the common purpose of enabling the infant to digest successfully the casein of cow's milk in sufficient quantities to thrive. Viewed in this light, the claims of the advocates of different methods of feeding are reconciled, since they are but seeking by different routes the same goal.

STARCHES.

Discussion concerning the ability of the young infant to digest starches is giving way to a realization that the utility of cereal decoctions as diluents does not depend so much on whether the starch itself can be digested as on the mechanical subdivision of the casein curd and the absorption of the vegetable proteids which such cereals contain. If the starch itself causes any difficulty or such difficulty be feared, it can be readily transformed into soluble carbohydrates by previous dextrinization. A gruel which has been so dextrinized is no longer a solution of starch, but a mixture of soluble sugars with gums and vegetable proteids. However, what is commonly called starchy indigestion and starchy non-digestion are two very different things. The former, indigestion caused by starchy foods, is deleterious when it occurs, but the non-digestion and non-absorption of starch granules is often more or less present even in adults wherever starch forms a part of the food. The mere presence of a starch reaction in the stools does not prove that the bulk of it has not been digested. If these decoctions of starch-bearing substances serve the primary purpose for which they are added to an infant's milk, the presence of undigested starch granules need not necessarily be more hurtful than that of cellulose and other undigested or unabsorbed residues.

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

USE OF BARLEY WATER.

Barley water, which is more commonly employed to make the curds of cow's milk smaller and more permeable by the digestive secretions, probably accomplishes this by its viscidity, which is partly due to its peculiar proteids. The addition of these vegetable proteids to the food may at times be no negligible quantity in determining the nutrition of the infant. This is not to be construed as advocating the feeding of infants entirely or even largely on cereals. While certainly not suited for indiscriminate use in all cases, the employment of cereal diluents for many children who have shown special difficulty in digesting the casein of cow's milk is now quite common in the hospitals of which I have knowledge. Barley water and barley gruel are much too elastic terms. Unless these are to be dextrinized the quantity of flour for young infants should not exceed one full teaspoon to each pint of water. The value of stronger cereal additions to the milk during the later months of the first year is now scarcely disputed.

CASEIN.

A new interest has been awakened in certain phases of feeding through a better interpretation of the behavior of casein in the infant's stomach and of the purposes and results of adding various alkalies to the food. Applying to these problems the most recent investigations, we have ceased to add alkalies on general but vague or unknown principles. Stated as simply as possible, these methods have resolved themselves as follows:

Casein readily combines with either alkalies or acids, and in doing so forms substances which have different chemical and digestive properties. Casein as it is found in cow's milk fresh from the udder is now called calcium casein, because the casein is chemically combined with calcium or lime. It would simplify matters if the term bicaseinate of calcium were applied to this casein of fresh cow's milk, for on adding limewater to such milk the casein takes up still more lime from the limewater and forms a new compound, which might be called caseinate of calcium. The difference between these compounds of casein and calcium in fresh milk, and in milk to which limewater has been added to the point of alkalinity with phenolphthalein, is as distinct as the difference between bicarbonate of soda (baking soda) and carbonate of soda (washing soda). Good fresh cow's milk requires the addition of from 60 to 80 per cent. of its bulk of limewater to make it alkaline to phenolphthalein and to change all the normal bicaseinate of calcium into this new compound, which is not coagulated by rennet.

When we add from 5 to 10 per cent. of limewater, as is customary in infant feeding, to a mixture containing but a small amount of actual milk, the casein will be wholly or almost wholly changed into the form which can not be coagulated by the rennet ferment of the infant's stomach until the secretion of acid has removed the extra calcium; but when the same percentages of limewater continue to be used, as the mixture is strengthened by additional quantities of milk, there begins to be present in the food more of the coagulated casein than the limewater is able to saturate. So that when we add from 5 to 10 per cent. of limewater to the weak milk mixtures suitable for a newborn infant we first give milk which is not curded, and later by gradually strengthening the food without raising the quantity or percentages of the lime water we supply increasing amounts of casein which will form a curd in the stomach.

OTHER ALKALIES.

Other alkalies added to fresh cow's milk will also form combinations with the casein and alter its digestive properties. Such are sodium carbonate, potassium carbonate, magnesium hydroxid, sodium bicarbonate and sodium citrate. The first three of these probably form caseinates of calcium and sodium, of calcium and potassium and of calcium and magnesium. Sodium carbonate and potassium carbonate are usually added in such quantity as to just about completely saturate the casein and prevent its curdling. But when we use bicarbonate of sodium we often add it in such quantity as not only to saturate the casein, but its unused portion remains in the food and acts as an antacid in the stomach. It not only modifies the digestive properties of the casein like the others, but its antacid properties which are not fully neutralized by the milk may be used to modify any natural or abnormal acidity of the stomach. It is especially in vomiting cases where the stomach is too acid from the production of abnormal acids that bicarbonate of sodium finds one of its best fields, although I believe that at times the more soluble compound with sodium is more readily absorbed than that formed with limewater.

The inhibition of the coagulating power of rennet on such casein as is saturated by the addition of these alkalies is, however, but temporary, for on the addition of an acid like gastric juice, in quantity sufficient to neutralize and remove the extra alkali, the normal properties of coagulation by rennet are restored.

On the contrary, when citrate of sodium is added to milk a very different chemical change takes place from that which accompanies the employment of the usual alkalies, for with citrate of sodium the casein is decalcified and a sodium casein is produced, which rennet can not thereafter affect, so that acid must form with it only the type of curd which acid would form with it outside of the body. My experience with the employment of from 1 to 2 grains of citrate of sodium to each ounce of actual milk in the feeding, as recommended by Poynton, has been sufficiently favorable to warrant the belief that it is worthy of a more extended trial in selected cases than it has yet apparently received in this country

EFFECTS OF ACIDS ON MILK.

I can only refer here to the further effects of acids on fresh milk or alkalinized milk in freeing the casein entirely from its combination with alkaline bases and as a second step forming acid compounds with the freed casein. Such are the curds formed when natural souring takes place, or when acid is added, of free casein, casein lactate and casein hydrochlorid. When rennet acts on the milk either before or conjointly with the acid, producing calcium paracasein (junket), the acid transforms this first into free paracasein and then into paracasein lactate or paracasein hydrochlorid.

PERISTALSIS AND INTESTINAL DIGESTION.

The exceedingly valuable experiments of Prof. W. B Cannon, of Harvard, have reconstructed our views of intestinal processes. Many of us were taught that peristalsis consisted in successive waves of contraction of th circular muscular fibers of the intestine, which advanced the food mass, aided by shortening of the longitudinal fibers. Professor Cannon, by watching through the *x*-ray screen the movement of food masses containing bismuth, has shown that circular contractions occurring simultaneously at short distances in the small intestine cause a segmentation of the food mass. These contractions then relax and are followed by other contractions midway between the former, dividing the masses at new points, but causing them to reunite at the previous points of segmentation, and this is repeated until finally the masses are swept by a peristaltic wave further along in the bowel.

These observations throw new light on the mechanics of intestinal digestion and the method by which the chyme is churned and mixed with the digestive secretions in the intestine. We are all doubtless familiar with certain stools of infants which present the fecal mass divided into what I have elsewhere designated as flakes about the size of a flattened oat. These, while ordinarily termed curds, are often small masses of perfectly digested fecal matter. They are most typical in the stools of very young infants, securing only small amounts of milk from the breast, where a small fecal residue is accompanied by considerable quantities of mucoid secretion. For their formation I have heretofore been unable to secure a satisfactory explanation. In the light of Professor Cannon's work, it is readily explicable that these flakes are formed by segmentation in the small intestine, but the fecal residue being small and the intestinal secretion relatively large they are eventually surrounded by the latter so that subsequent fusion into larger masses is prevented.

Again, no better explanation could be offered us of the injurious influence on intestinal digestion of flatulent distension of the bowel. It is almost inconceivable that a much distended small intestine should be capable of producing a normal segmentation of the chyme or of bringing the food masses into repeated contact with the entire area of secreting surface. While improper digestion of the food leads to the formation of the gas which distends the bowel, this is but another instance of a vicious circle which must be broken before proper intestinal digestion can be resumed.

PERCENTAGE FEEDING.

Now that the furore which followed the introduction of the American system of percentage feeding and milk modification has subsided sufficiently to allow us to estimate calmly its value, certain conclusions are forced on us. The first of these is that in scope and elasticity it far surpasses all previous efforts at artificial feeding because it enables us, as never before, to control intelligently and with approximate accuracy the constituent elements of the food for each individual infant. On the other hand, it is no detraction whatever from the merited laurels of those who have devised, developed and popularized this system, to say that we should now realize that no method of artificial feeding can ever safely or properly replace the physiologically adapted milk of the human breast among the great mass of our population. Artificial feeding is unquestionably attended with more danger than breast feeding. The two alternatives should not be offered lightly to the prospective mother as though they were of equal value. While bad breast milk, if it be really bad, is worse than good artificial feeding, the nervously and socially overwrought mother does not make up the vast bulk of the motherhood of our country. Breast milk which is good and plentiful, or which can be made so with a little rational attention, far surpasses as a food that which is furnished by the cow and is infinitely beyond the combinations of the manufacturing chemist.

INFANT FOODS.

Whether the harm done by infant foods which claim to equal mothers' milk has been in any degree offset by the wide dissemination of their often faulty directions for infant feeding might perhaps be debatable. Parents who employ these on their own responsibility and physicians who recommend them should inform themselves, however, concerning their composition and understand that infant foods are but rarely safe or of value for any considerable period by themselves; that they are subtle and prolific causes of rickets, scurvy and malnutrition, and that many, nay most of them, are really successful only when combined with fresh cow's milk and its indispensable proteids, to which the child so fed owes its proper development, although the food manufacturers claim the credit.

CLEAN MILK.

The reason why cow's milk is the best commercial substitute when we are forced to resort to artificial feeding has already been stated. To be suitable for this purpose it must be fresh and pure. The movement for a clean milk supply which had its origin with Dr. Coit, in Newark, N. J., is yearly gaining headway over the country and must be accorded a place among the great life-saving measures of recent years. We have not yet reached such perfection that pasteurization or some modified form of sterilization is not usually necessary during the warm months of the year unless the circumstances be exceptional.

One of the objections most commonly raised to the introduction of modified milk feeding among the poorer classes has been that it would be impossible to teach the mothers properly to prepare the food. My personal experience has amply disproved this. If the physician himself thoroughly understands the steps to be taken and is willing to take the time not only to write out his directions, but to explain them fully, excellent results may be obtained. But this is not enough; he must later make the mother tell him in her own words what she is doing, for by this method only are serious errors and omissions corrected. With time and patience most mothers may be taught to prepare food suitable for their infants, using inexpensive instruments of precision. But they must also learn that such feeding requires supervision and change with the growth or temporary indisposition of the child. It is to ignorance of this fact, or to the inability on the part of the physician to maintain control, that artificial feeding owes its greatest dangers.

As a rational outgrowth of the movement to secure clean milk has come the conviction that the less milk and cream are manipulated the better they are digested by infants and consequently that the use of top milks of easily varied richness in fat is preferable to cream and milk mixtures. The fat content of food prepared from top milk can be more easily controlled. Possibly the only exception to these statements is where both the requisite purity and exactness of dispensing can be obtained through milk laboratories.

THE AMOUNT OF FAT.

Evidences of proteid indigestion are more readily comprehended than those of too high fat. For a not uncommon type of such stools Dr. Holt's simile of scrambled egg is an excellent one which I have had frequent occasion to verify. The recognition should be more general of the fact that high fat is capable of causing constipation as well as a fat percentage which is too low, and also of the futility and probable danger of pushing the fat much beyond 4 per cent. for any child. This, then, constitutes one of the risks in the use of cream and milk mixtures, owing to the wide inaccuracies which may result from the variableness of all centrifugal creams, and the absolute impossibility of making any close estimate of the fat content of such creams without the use of the Babcock machine. Even commercial creams from the same source vary daily very considerably. I have in mind a recent instance in which the child's food had been made with cream and milk in the country, but on return to the city a cream was secured marked "special." This I found to contain 40 per cent. of fat. The previous formula made up with this actually contained 11 per cent. of fat, and only a fortunate habit of inquiring into details prevented the serious disturbance which inevitably would have followed. In other instances the persistent refusal of the child to take a suitable quantity from its bottles, or the otherwise unexplained presence of mucus in the stools, has led to similar discoveries.

FEEDING FORMULÆ.

Methods of obtaining milk formulæ and rules for the preparation of such food are now accessible in several standard text-books. Those, however, who are satisfied with securing a few stock formulæ will seldom attain to genuine success in infant feeding, for this includes the reclaiming of the marasmic as well as the conduction of the normal infant. Those who have no clear conception of the purposes subserved by the various component parts of the food nor of the indications for varying these have no clue to the solution of difficulties as they arise, and readily fall victims to the seductive claims of the patented foods in the hope that in some mysterious way they may be helped out of their troubles.

EXPLANATION OF DIFFICULTIES.

Many of the difficulties experienced arise, I believe, from the non-comprehension and non-application of certain broad principles. Surely, enough has been said recently by many writers concerning the necessity of feeding infants as individuals, but the distinction between the fairly normal infant and the sick child, which includes the child hitherto fed on condensed milk or various commercial foods, as well as the child with disturbed digestion or nutrition from any cause, is not sufficiently understood. The usual schedules for feeding at different ages may apply to the fairly normal child whose digestive powers have been developed, more especially when such feeding was begun at birth; but to endeavor to make an infant with disturbed or untrained digestion take the amount of casein in the food usually scheduled for its age is folly. Trial must first be made with much lower formulæ, and particular attention given to determining whether the difficulty lies with the digestion of the fats or of the proteids. The stools, the weight chart, and the behavior of the infant are the triad with which successful feeding must be conducted. In my wards of the Nursery and Child's Hospital the stool of each feeding case is brought to the cribside in a basin to be studied in conjunction with the range of the weight chart, inspection of the infant, and the nurse's report before changes are made in the food. Such changes must not be made too frequently and allowance should be made for minor variations of both weight and stools. In the case of an infant with bad stools the restoration of digestion as evidenced by better stools and greater comfort is infinitely more important than an immediate gain in weight. It is, in fact, a prerequisite to such gain. It is now rather generally accepted that fairly normal young infants whose artificial feeding is begun soon after birth will, while they are being trained to digest their new form of casein, usually take a rather high proportion of fat to proteids (3 to 1), since the fat supplies an easily absorbed source of heat and energy. Not all, however, will tolerate so high a proportion. When proteid digestion has been established, the proteid percentage should be pushed up somewhat more rapidly than was formerly deemed advisable, in order that there may be furnished adequate proteid for proper nutrition.

On the other hand, I think there is an increasing tendency in the sick wards of infants' hospitals to employ level fat and proteids (i. e., formulæ made from plain milk). These are better borne by sick children who have fever and are also better assimilated in malnutrition cases in which the infants have suffered from varied attempts at feeding. Fat starvation does not occur with these level mixtures as it does with almost fat-free infant foods or condensed milk which is relatively poorer in fat than good average fresh milk. There is a considerable number of such infants who can not take the high fat ratios of the common formulæ, although after good growth has been established on level formulæ cautious attempts may be made to raise the fat ratio a little higher.

Somewhat more advanced infants with fairly good digestions take the usual schedule proportions of fat and proteids (2 to 1) well, but much of what might be called subnutrition may be avoided after the sixth or seventh month by pushing the proteids somewhat above 2 per cent., a percentage which until recently has been considered a fair one at this period. The lack of formulæ between 4.7.2 and pure milk 4.4.4, except for such as could be made by the partial dilution of the milk, has been noticeable in some hospitals and milk dispensaries.

Finally, too much emphasis can not be given to the statement that the most carefully planned percentages are often fruitless because of overfeeding or improper intervals. Far less difficulty would be experienced in the feeding of infants if closer attention were given to the well-established rules governing the proper intervals and the quantity. No rules are so frequently violated even in hospital practice. It is especially noticeable in the tendency to overfeed undersized infants. Many poorly nourished infants are fed at intervals which correspond to their weight or apparent age. At the same time, despite or perhaps owing to their failure to gain, the quantity is repeatedly increased to equal or even to exceed that of a normal infant until the stomach can neither contract properly on its contents nor secrete sufficiently for their digestion. Energy and material which should be used for growth are thus expended on this undue labor of digestion, if indeed there can be any proper absorption from the partially digested mass. By giving at longer intervals and in smaller quantities (which may be made more concentrated as the stomach regains its tone) excellent results are produced in these cases.

807 Madison Avenue.

WHOLE MILK VERSUS LABORATORY MILK.*

A. McALLISTER, M.D.
CAMDEN, N. J.

Whatever opinion is entertained as to the intrinsic value and practical utility of cows' milk modified by the percentage method, as practiced in special laboratories, there is unanimity in pronouncing the plan the best yet advanced for securing constancy in the constituents of a substitute infant food. It admits of accuracy to a small fraction as no other known method does. It renders possible, from day to day, feedings practically invariable as to their proteids, fat and sugar.

In short, the laboratory product is an ideal substitute for mother's milk, theoretically. But if the accumulated experience in infant feeding has established one thing beyond another it is that we are not up against a theory but against a condition—a condition as stubborn as any met in the practice of medicine.

This condition is unnatural, morbid and confusingly variable. Infants are born anatomically and physiologically built for the warm mother breast and virile mother milk. Any other method and product in the dining-room appointments of this new arrival must be classed as abnormal. He may or may not take the imposition kindly. Frequently his whole being is thrown into a state of revolt and ordinary conciliatory measures may prove of no avail.

Physicians are generally consulted only in cases demanding extraordinary measures. A large proportion of these are already complicated by more or less functional, if not, indeed, organic, disease. No fast rules for feeding can be laid down, because no two cases are quite alike. Every infant deprived of its normal nutriment is distinctly a law unto itself.

As in applied therapeutics, so in infant feeding, the very multitude of plans and products that have been indorsed in the past is indicative of great problems yet unsolved. Ten years ago we sought an easy solution of the entire question in sterilization. Later we took up laboratory milk. The present plea is for a return to raw cow's milk.

In the subject of this paper the term laboratory milk is made to include every form of milk other than fresh raw cow's milk or fresh cow's milk diluted and warmed to about 100 F.

Clinically, milk modified by the percentage method has proved applicable only for temporary use in certain cases to bridge an emergency. For general use or for prolonged feeding in any one case the results have disappointed its most sanguine advocates. Economically its utility is even more restricted. The cost of such milk, the lack of proximity to a laboratory and the necessity for change of the prescription from time to time place the product within the reach of only a favored few among the wealthy.

Sterilized and pasteurized milk are now practically within the reach of every family, but no physician of large experience recommends either, especially not the former, for continuous feeding. They are employed now only for one of two reasons. When the milk supply is not above suspicion in freshness and purity, or has been condemned, recourse must be had to one of the above methods until a proper milk can be secured.

Again, in the event of serious disturbances in the alimentary canal it is the part of prudence to allow only sterilized milk while such disturbances are being removed. But this practice is now recognized as only offering to the belabored digestive organs a product more difficult of digestion. A better procedure is to allow only sterile drinks or thin gruel while the digestive tract is being cleared and then resume feeding with largely diluted milk. On the same principle and for the same reasons peptonized or partially digested milk is advantageously employed.

A synthetic breast milk is still to be found. Our nearest approach to it is laboratory milk viewed merely from the point of its chemical composition. From every point it is far from a duplicate of mother's milk. The natural milk emulsion has been destroyed in the process of centrifugalizing. The life-quickening principle which distinguishes milk from every other liquid food has been destroyed by heat. The product is a mixture of dead milk constituents.

The wire in your scrap pile may be an exact duplicate of that stretching overhead, but it is only a mass of inert metal, while that overhead is described as live. In much the same sense milk that once had the sanction of eminent authority is now recognized as scrap-pile goods. The life-quickening principle is not in it. It is dead. Fresh milk is not a dead liquid. Like the vital fluid tissue, the blood, of which it is an immediate product quite as much as nerve tissue, fresh milk is much alive.

FRESH COW'S MILK IDEAL SUBSTITUTE FOOD.

The ideal, natural, practical and economical substitute food for infants is fresh cow's milk. Drawn and handled with such care as to cleanliness and health as is required by laboratory standards, cooled at once and then kept at a temperature below 50 F., cow's milk possesses all the important vital constituents. It is a live fluid. These constituents give to milk the characteristics described as freshness or sweetness, and which are not found in stale, sterilized or laboratory milk.

Freudenreich ascertained that this freshness has a distinct germicidal power, typhoid and cholera bacilli being destroyed by fresh raw milk. This power he found absent in milk which was well kept, yet four or five days old, and in milk which had been heated to a temperature exceeding 130 F. Too little attention has been directed to securing the benefits of this native virility in cow's milk. We need as large a proportion of it as can possibly be secured to the infant. In country practice infants have the advantage of these benefits. The greater difficulties of infant feeding in city practice are at least in a measure due to the absence of these benefits. The difficulty is further heightened by the addition of deleterious qualities to milk through careless, dilatory and otherwise unscientific handling.

Each year makes the successful feeding of city infants with cow's milk a less difficult problem. Much is to be gained by persistent agitation. The laity can have a milk supply 100 per cent. better than now provided by simply demanding it. The first cost need not be materially increased. With our constantly improving railroad facilities, due to the popular clamor for rapid transit, the question of greatly improved milk transportation is no longer difficult.

Much has been accomplished along educational lines by our bacteriologic and milk laboratories. Methods by which cow's milk may be kept fresh and not only safe but superior without the addition of a preservative are not unknown to the average dairyman. He will employ these methods when the consumer demands it. There is no doubt that at the present time inferior milk is marketed by pasteurizing it. The term is high-sounding and with some is synonymous with excellence. The laity need to learn that good milk properly handled not only does not require sterilization, but is positively made less valuable from the dietetic point of view by such process. Milk so treated is not freed from the products of bacterial growth. It is not absolutely sterile, and even if it were would require careful handling to guard against subsequent infection and multiplication of bacteria.

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

The subject of federal control of the system of milk production and distribution is receiving increasing attention. But, as in all matters closely related to the public health, education will do more good than legislation. Reynolds, of Chicago, has made a strong plea for twelve-hour milk. He pointed out that such milk is worth more for infant feeding than milk twenty-four hours old, while milk thirty-six hours old is not only of little food value, but positively harmful to young and delicate children.

The milk bottle is popular, but at the present time is too frequently looked on as a positive guarantee of freshness and purity. With all its advantages the bottle is the source of much mischief and positive harm. Much of our city milk is bottled at the milk depot, and not a little in the milk wagon on the streets. Milk bottled at the dairy permits of great leisure in transportation, and much of the milk when it reaches the consumer is in a state of semi-decomposition. Public sentiment needs an awakening along this line.

Most of the milk consumed in Camden comes from Salem and Burlington counties, New Jersey. The best quality is "certified milk" and gives general satisfaction in the feeding of infants.

580 Federal Street.

DISCUSSION

ON PAPERS OF DRS. COTTON, SOUTHWORTH AND MCALLISTER.

Dr. D. E. English, Millburn, N. J., said he realized that bringing up a child in the country is a very different thing from keeping a child from dying amid the horrors of a great city. The working woman's baby in the country sits on the kitchen floor and uses his crust of bread or bone to wipe up the floor or scratch the dog's back, and then puts it into his mouth and does not get sick. Why? Simply because the mother has not time to bother with him. He is not taken up and fed until his stomach is entirely empty and he is really hungry. Then he is fed until his stomach will not hold any more, put into a clothes-basket and set out of doors under a tree, where he sleeps for three hours or more. It is an hour, or perhaps two hours, longer before he is again fed. This means that the baby's stomach has been distended with food, and that it has had time for digestion, evacuation, contraction and rest before the next feeding. This is the true idea of infant feeding. A baby's digestive organs can not always digest the same amount of the same kind of food in the same number of minutes. Again, a baby will not be healthy and happy unless he earns his living, any more than will an adult. A baby earns his living by the cool bath, the air bath, by exercising his limbs, by crying, and by being exposed to cool, fresh air.

Dr. John Lovett Morse, Boston, said that, in feeding babies, when breast milk can not be secured the idea is to give a food suitable to the baby's digestion. It is an advantage to know what one is working with and not to work with unknown quantities. This knowledge does not prevent trying all kinds of infant feeding, nor the use of good common sense. He believed with Dr. Southworth that milk can be modified at home, not only by the rich but by the poor. The only question is whether it will be modified correctly. He did not agree with Dr. Southworth in preferring top milk to milk and cream. His experience and that of many men accustomed

must not be made too frequentl and allowance shoul be made for minor variations of both weight and stools In the case of an infant with bad stools the restoration o digestion as evidenced by better stools and greater com fort is infinitely more important than an immediate gai in weight. It is, in fact, a prerequisite to such gai It is now rather generally accepted that fairly norm young infants whose artificial feeding is begun soo after birth will, while they are being trained to dige their new form of casein, usually take a rather hi proportion of fat to proteids (3 to 1), since the fat su plies an easily absorbed source of heat and energy. N all, however, will tolerate so high a proportion. Wh proteid digestion has been established, the proteid p centage should be pushed up somewhat more rapi than was formerly deemed advisable, in order t there may be furnished adequate proteid for pro nutrition.

On the other hand, I think there is an increasi sary [illegible] in the sick wards of infants' hospitals to em something othe [illegible] proteids (i. e., formulæ made from ment of percentages of the [illegible] put into an infant's stomach in [illegible] borne by sick children feeding patient, who must be treated as w[illegible]imilated in malfood. The general hygienic management of the baby is most important and determines to a great extent its ability to overcome various digestive disorders.

Dr. R. B. Gilbert, Louisville, Ky., said that the extent to which bacterial flora get into the milk is well known, and no matter what the percentage of proteid may be, these bacteria are apt to occur. The presence of colostrum in milk is also an important matter, for the milk of one pregnant cow in a herd of twenty will so infect that milk that it will be injurious to the baby. He has demonstrated that the pancreas is fairly well developed in babies and has wondered that we have been taught that the pancreas does not secrete anything in early life. It is as well developed as any part of the intestinal apparatus. He thought that Dr. Cotton's suggestions relative to sodium citrate would help to solve many difficulties in milk modification.

Dr. T. W. Kilmer, New York City, said that the baby should be supplied with that which it has a right to demand, breast milk, and the physician ought to know what breast milk contains. The average general practitioner does not have this knowledge; therefore, he is unable to feed babies successfully. He should know how much fat, proteid and sugar he is giving the baby.

Dr. A. H. Wentworth, Boston, said that apparently it is desirable for the infant to take as much proteids as it can get. So far as he knows, all the evidence is otherwise. Chittenden and other authorities seem to show that the excess above a certain amount only throws more work on the various organs and serves no helpful purpose. Men who have done most for infant feeding in Germany are unanimous in the opinion that babies need very little beyond one per cent. of proteids in their infancy, that they get sufficient quantity in that amount to nourish them perfectly. In regard to distending the stomach, he thinks that overdistension of the muscles is deleterious.

Dr. Effa Davis, Chicago, mentioned a series of five cases in which the children were all doing well on the ordinary milk mixture, but when they were put on the sodium citrate modification all remained stationary in weight for six weeks and then began to lose, notwithstanding the fact that they were taking two and three times as much milk as usual. When they were taken off the treatment it took them all ten days to regain their normal equilibrium. All are now on the ordinary modification of milk and gaining. It is clear, therefore, that all babies do not do well on the sodium citrate feeding.

Dr. J. W. Vanderslice, Chicago, said that sodium citrate solution has been used in a large number of cases for three years by men who have a very wide clinical experience. Sodium citrate advocates say that they use the simple method, believing the method to be more simple than the modified

epsom or rochelle salts, and the fluid fecal matter was collected in clean porcelain dishes with covers. This *material was examined in a perfectly fresh condition.* The series consisted of 50 patients, and the infections noted are tabulated as follows:

Total cases with intestinal parasitic infection, 18.

Amœbæ	11 cases
Uncinaria duodenalis (ova)	4 cases
Tricocephalis dispar (ova)	4 cases
Strongyloides intestinalis (ova)	3 cases
Opiscorcus sinensis (ova)	1 case
Ascaris lumbricoides (ova)	1 case
Hymenolepis nana (ova)	1 case

From the preceding figures it is evident that plural infections were present. They were as follows:

	Cases.
Amœbæ and *Strongyloides*	2
Amœbæ, Ascaris, Uncinaria and *Tricocephalus*	1
Amœbæ and *Opisthorcus*	1
Amœbæ alone	7
Total	11
Strongyloides and *Amœbæ*	2
Strongyloides alone	1
Total	3
Uncinaria and *Hymenolepis*	1
Uncinaria, Amœbæ, Ascaris and *Tricocephalus*	1
Uncinaria alone	2
Total	4
Tricocephalus, Amœbæ, Ascaris and *Uncinaria*	1
Tricocephalus alone	3
Total	4

Contrary, then, to the report I had received, amebas are not infrequently found in the stools of natives of Siam. Moreover, it can not be said that these amebas are of the non-pathogenic type, if such there be. At least three of the patients examined were suffering from a true amebic dysentery, others had more chronic or subacute intestinal symptoms.

In all 50 cases were examined, of which 18, 36 per cent., presented infections with intestinal parasites (exclusive of monads which were present in at least 60 per cent. of all the cases). Of the 18 cases of infection, 11 showed amebas, a percentage of over 61 per cent.

PERCENTAGE OF INFECTED CASES OUT OF A TOTAL OF 50.

	No.	Per ct. of infected cases.	Per ct. of total cases.
Infected cases	18	....	36
Infected with *Amœbæ*	11	61.1	22
Infected with *Uncinaria*	4	22.2	8
Infected with *Tricocephalus*	4	22.2	8
Infected with *Strongyloides*	3	16.6	6
Infected with *Opisthorcus*	1	5.5	2
Infected with *Ascaris*	1	5.5	2
Infected with *Hymenolepis*	1	5.5	2

The only conclusion that one may draw from these figures is that infection with animal parasites is widespread in Siam (the patients being from various districts and a few were Chinese), and that amebic infection is very common. It is my intention to make more complete records on this subject as time and opportunity allow.

So far as I can discover, *Opisthorcus sinensis* has not been previously reported from Siam. *Hymenolepis nana* has been reported from Siam by Rasch.[1]

---

[1] Deutsch. med. Ztschr., 1895.

Palpation to Find Position of Fetus.—B. G. Snyder, in the *Canada Lancet*, June, 1906, in discussing the position of the fetus *in utero*, emphasizes the value of external palpation, as a convenient, simple method, which practically eliminates the danger of infection. It is of most value before labor, but the progress of labor can be judged just as accurately after a little practice by this method as by repeated vaginal examinations. Lastly, it compels a physician to study the different positions of the child and their relations to the birth canal and thus makes him a more intelligent obstetrician.

THE TREATMENT OF PURPURIC CONDITIONS AND HEMOPHILIA.*

JOHN W. COE, M.D.
NEW YORK CITY.

It is not the purpose of this paper to discuss the numerous theories concerning the etiology and pathology of these interesting conditions, for the multiplicity of ideas is the best evidence of the obscurity which still surrounds them, but to outline a course of treatment which has been beneficial.

Since A. E. Wright, in 1891 and 1893[1] and in subsequent articles, advocated the use of the chlorid of calcium to hasten the coagulation of the blood, many patients with hemorrhagic tendencies have been greatly helped by it while with others it seems inert. The preparations of the adrenal gland are also of value in many cases.

Boggs,[2] in 1904, demonstrated that the lactate of calcium had the same accelerating effect on coagulation as the chlorid.

Wright[3] and Paramore,[3] in 1905, published the results of a series of experiments in which they used the lactate of calcium and the carbonate of magnesium, as well as the chlorid of calcium. They found that the coagulation time was more uniformly influenced by the lactate than by the chlorid and that the magnesium salt had a similar accelerating effect. These were merely laboratory tests, some of them made on normal individuals, others on patients with various ailments, and the drugs were not used therapeutically.

During the past few months I have treated several patients with the lactate of calcium, with results that seem worth recording.

Case 1.—A well-known physician, aged 53, who has one of the largest general practices in New York, is a member of a hemophilic family. His grandfather and father were bleeders, as are also a sister and a son. In the patient the tendency to bleed appeared when he was ten years old. The bleeding has always been most profuse from the nose, but he has bled much from skin of the face and head and from the mucous membranes of the mouth. The nasal hemorrhages have often been prostrating and have been increasing in severity and frequency, often requiring plugging once or twice a day.

Needless to say, this patient has had the best of local treatment by specialists and, as he says, has taken barrels of calcium chlorid and the adrenalin preparations with no benefit. During the autumn of 1905, the bleeding was more profuse than ever before and the patient's large practice was a burden to him.

Blood Examination.—On December 17, the red blood cells were 3,680,000, white cells, 5,000, and the hemoglobin 70 per cent. The stained specimens showed pallor of the red cells, moderate variations in size and shape with a number of large cells. The plates were decidedly below normal as judged from a stained specimen. The differential count of the leucocytes was normal and need not be given in detail.

Treatment and Result.—At that time the patient was bleeding practically every day and very profusely. On December 21, when bleeding, fifty grains of calcium lactate, dissolved in water, were taken and in half an hour the hemorrhage ceased with no other treatment.

During the next week, that is until December 29, twenty grains of this drug were taken three times a day. There was no bleeding, but once or twice there was slight oozing from the nose, which stopped in a few seconds.

---

* Read before New York Academy of Medicine, May 22, 1906.

* From the Laboratory of Clinical Pathology, Cornell University Medical College.

[1] British Medical Journal, Dec. 19, 1891; July 29, 1893.

[2] Deutsche Archiv. für klin. Med., March 15, 1904, p. 539.

[3] Lancet, Oct. 14, 1905, p. 1096.

No calcium lactate was taken from then until January 10, and, after a few days, moderately severe attacks of epistaxis began again.

On the evening of January 10 there was a profuse hemorrhage and the patient took sixty grains of the calcium lactate. The bleeding stopped almost at once.

By January 14 there had been a gain in weight of five pounds since starting the treatment, and the condition of the blood steadily improved. The experiment of stopping the lactate for several days was repeated on several occasions, always with the same result. During the last two months the patient has taken about once a week fifty grains of the lactate and has been comparatively free from bleeding. Occasionally there has been a hemorrhage of moderate severity, but always soon controlled. Previously, the putting of the head down, as in the act of lacing the shoes, would usually be followed by epistaxis, often lasting for hours. For months now, much more violent exertion than this has caused no discomfort. Examination of the blood a short time ago showed a perfectly normal condition.

The coagulation time in this patient, as measured by Wright's tubes, was never very high, being between six and seven minutes, but it is invariably lowered from a minute to a minute and a half by a full dose of the lactate. This effect is produced in an hour at the most and persists for about a week.

Probably no one would be so optimistic as to expect a cure of such a marked case of hemophilia running through four generations, but the improvement has been so marked and, to date, so constant that, compared with his previous condition, the patient is well.

This man's son, 23 years old, began to have frequent attacks of epistaxis at the age of 16. The hemorrhages have never been very profuse, but have made him quite uncomfortable, as they began without the slightest warning while he was walking along the street or at the table, etc. No records of his case have been kept, but during the past five months he has taken an occasional dose of the lactate, about forty grains once a week, and his condition has been much better than for years.

Case 2.—J. S., male, aged 17, student, family history entirely negative.

History.—This boy began to have frequent, profuse attacks of epistaxis when five years old. These have recurred at irregular intervals to date, at times lasting for hours and causing him to faint. The gums and mucous membrane of the mouth at times ooze blood, but there has been none in the urine or stools. The severe attacks have usually been accompanied by numerous hemorrhagic areas over the legs, arms and beneath the eyes. When thirteen years old he began to have occasional rheumatic pain in the knees. This trouble has frequently recurred, usually with slight fever for a few days, and is associated with an outbreak of petechiæ on the legs. His physician, Dr. E. W. Perkins, states that practically all the time for years the boy has had well-marked purpuric eruptions somewhere on the body. The slightest bruise is invariably followed by ecchymosis. Four years ago, after having a molar tooth pulled, he bled profusely for three hours.

Examination.—When first seen, March 6, 1906, there was a moderate number of petechiæ over both legs and several larger areas on the thighs. The mucous membranes of the mouth showed several small purpuric spots and there were marks on the trunk, as from bruises.

Blood Examination: This showed: red cells, 4,680,000, white cells, 6,000, hemoglobin, 80 per cent. The coagulation time was four minutes. A stained specimen showed a normal differential count and that the blood plates were very few. Later the plates were counted and were found to be 29,000 to the cubic millimeter.

Treatment and Results.—The patient was given fifteen grains of calcium lactate three times a day for a week. At the end of this time the coagulation time was unchanged, being four minutes. The purpuric spots were much faded and no new areas had developed. A severe blow on the right knee had resulted in no ecchymosis.

The calcium lactate was stopped on March 20. On March 27 a profuse eruption appeared on the thighs and legs, associated with pains in both knees. The patient was given salicylic acid and sodium bicarbonate with fifteen grains of calcium lactate every morning. Four days later he reported that the improvement had been very rapid, much more so than from any previous attack. The purpuric eruption had nearly disappeared. He was then given Fowler's solution and iron with fifteen grains of calcium lactate, twice a week. From this time until May 14, that is, for more than six weeks, he remained free from bleeding, with the exception of an occasional spot on one or the other leg, and all the time he was playing and exercising as vigorously as other boys. He then neglected to have the prescription for the calcium lactate refilled and two days more than usual having elapsed between the doses, he was awakened on the morning of May 14 by the most severe attack of epistaxis for months. This lasted for over an hour.

The coagulation time on this date was four and one-quarter minutes and the blood plates very few.

It is interesting to note that in spite of the decided hemorrhagic tendency in this boy the coagulation time is at all times a low normal, the variations in health being between three and six minutes by Wright's tubes.

Case 3.—A. H. G., aged 31, male, married, instructor in Latin. Family history entirely negative.

History.—The patient has never had any serious illness. When about six years old he bled profusely for hours after having a tooth pulled. Two years later frequent attacks of epistaxis began. The bleeding occurred from either nostril or from both simultaneously, and often continued for hours, requiring packing. Such attacks have recurred frequently to date and last autumn became more numerous than ever before, being only from four to seven days apart for weeks.

Any slight bruise, as even the rubbing of a dress-suit case on the legs, is always followed by ecchymotic areas. The last of December he developed a carbuncle on the upper lip. At the operation, performed in one of the large hospitals in the city, the bleeding was not extreme, but at the subsequent dressings, profuse hemorrhage occurred. He was given calcium chlorid with some benefit. A few days after leaving the hospital the epistaxis recurred.

Blood Examination.—When referred to me by Dr. D. B. Brinsmade, Jan. 23, 1906, the red blood cells were 4,372,000; white cells, 12,000, and the hemoglobin 70 per cent. A stained specimen showed marked pallor of the cells. The blood plates were very few and small in size. This point has also been noted in all subsequent specimens examined. On one occasion, when counted, they were 22,000 to the cubic millimeter. The differential count was normal. Before beginning treatment the coagulation time was eight and a quarter minutes. This promptly fell to seven minutes, where it remained.

Treatment and Result.—The patient was given twenty grains of the lactate of calcium three times a day for a week and after that forty grains twice a week. On February 5 he returned to work feeling as strong as ever and had no tendency to hemorrhage, even on blowing the nose

On February 13 medication was stopped and not resumed for a month. Then oozing began on three occasions from the left nostril, but ceased after taking sixty grains of the calcium lactate. His condition then continued excellent.

Examination about the middle of April showed several small ecchymotic areas. There had been no bleeding from these, but thinking to prevent any future hemorrhage, they were cauterized with silver nitrate solution. In less than twenty-four hours severe epistaxis, lasting several hours, occurred from sloughing. Since then administration of calcium lactate has been continued twice a week and he has also been given iron with Fowler's solution. There has been no further hemorrhage.

Case 4.—J. C. K., aged 44, male, single, family history excellent.

History.—For twenty-one years the patient has been advance agent for a minstrel troupe and very active. He has always been in perfect health, except that two years ago he was treated for a mild attack of lumbago. The only indication of rheumatism has been slight pain and stiffness in the left shoulder at intervals, since last December. He first came under observation on Jan. 6, 1906.

This patient showed no purpuric tendency until the middle of June, 1905, when he noticed a purplish area several inches in diameter on the left thigh, followed a few days later by a similar area on the right thigh. About August 1 numerous small spots appeared on both legs and since then successive crops come and go, so that he has never been free from them. Walking is always followed by innumerable new eruptions. At times many spots have appeared on the limbs. The slightest bruise was invariably followed by an ecchymotic area.

While riding on a train, June 24, 1905, he had a sudden, profuse hemorrhage from the right nostril and fainted away. Between then and October 1 there were five very severe attacks of epistaxis, requiring packing of both nares. After one of these the patient was in a hospital for three weeks, merely from exhaustion, and he has not been able to work since early last autumn. There had been no profuse epistaxis since October 1, but frequent oozing from the nose. Numerous hemorrhagic areas have appeared on the gums and throughout the mouth. There has never been any blood in the urine or stools.

This patient was treated in several cities, both in hospitals and by physicians in private. He states that he was given calcium chlorid, the adrenal preparations, ergot, etc., and that the nose was treated locally with numerous styptics.

Examination.—When first seen, Jan. 6, 1906, there were multitudes of petechial and ecchymotic areas in all stages of development over both legs. There were a few small spots scattered over the trunk and large areas on the arms. The lips showed several spots, the gums were discolored in places and appeared soft.

Blood Examination: On January 6, blood examination showed red cells 4,928,000, white cells, 8,000, hemoglobin, 70 per cent. The differential count was normal and the plates practically absent.

Treatment and Result.—The patient was given sixty grains of calcium lactate at once and fifteen grains three times a day for a week. Two hours after the initial dose the coagulation time was lowered from six and one-quarter to five and one-quarter minutes. As this patient lived out of the city he was seen only once a week and later once in two weeks.

After the first week's treatment there was a marked improvement, the old spots fading, a few new ones appearing. The patient stated that he had noticed a change for the better in three or four days. From that time there has been a slow but steady improvement. For experimental purposes the calcium lactate was stopped on several occasions; such action was invariably followed by numerous petechiæ. At these times also the coagulation time was lengthened, only to be lowered by the lactate.

During the last two months this patient has taken regularly thirty grains of the lactate twice a week. He has led a very active life, often walking several miles a day over rough country and through bushes, and has also rowed a boat long distances. His condition is excellent and he seems a well man.

Blood examination recently showed the red cells to be 5,280,000, white cells, 9,000, and the hemoglobin, 90 per cent. A stained specimen was normal, except that the plates were still very low. The count of the plates was 25,023 to the cubic millimeter. This being so we do not consider this man cured, but believe the purpuric tendency is kept under control. The patient thinks himself as well as ever and is going to return to work soon.

Case 5.—H. H., male, aged 33, married.

History.—This man was very large and robust and had never had any sickness. For years he has been a steady drinker, taking three or four glasses of beer and one glass of whisky a day. He was first seen by Dr. L. L. Bradshaw, to whom I am indebted for the case, on April 8, 1906. Four months before, the patient had noticed a few reddish spots on the right ankle. These slowly extended upward to the knee and to the left leg. As there was no discomfort he did not consult a physician and continued at his work in a lumber yard. About two weeks before coming under observation he began to spit blood occasionally, from oozing of the gums, and this continued. On April 7 this was much more profuse, but he still worked all day. That evening eruption appeared over the entire body.

Examination.—When seen on April 8 there were petechial and ecchymotic areas, some larger than a palm, over the entire body, face and scalp. He was spitting blood several times a minute from the gums, and all of the mucous membranes of the mouth. Sixty grains of calcium lactate were at once given and thirty grains ordered three times a day. The next day, many of the areas had ruptured and were covered with crusts. The gums still bled freely.

Blood Examination: This showed red cells, 4,480,000, white cells, 12,000, hemoglobin, 90 per cent. The differential count was polynuclear leucocytes 79 per cent., lymphocytes, 12.3 per cent., large mononuclears, 4.3 per cent., transitional, 4 per cent., eosinophiles, 0.3 per cent. The plates were practically absent.

Urine: On the evening of this day the patient began to pass large amounts of blood in the urine. A specimen, centrifuged, showed 13 per cent. of sediment composed almost entirely of red cells. Large amounts of quite fresh blood also appeared in the stools.

Course of Disease.—The following day, April 10, there was much less blood from the mouth and the skin eruptions were fading. The urine showed 10 per cent. of blood. The anemia was increasing. The red cells showed marked variation in shape and size and a few normoblasts appeared. On April 11. the coagulation time, then taken for the first time, was eight minutes, and this was after large doses of the calcium lactate for several days. The urine showed 5 per cent. of blood. April 12, through a mistake of the nurse, sixty grains of the calcium lactate were given every three hours for six doses, but no ill effects followed. On the following day, the thirteenth, the urine was free from blood and all bleeding had ceased from the skin and mucous membranes. The red cells were now 3,168,000, white cells, 13,500, and the hemoglobin, 60 per cent. The coagulation time was six and three quarters minutes. The plates were still almost absent.

For several days during the bleeding period the temperature varied between 100 and 102 F. by mouth, and the pulse between 100 and 120. This, with the presence of a polynuclear increase, is an indication of an infection of some sort.

On April 14, Fowler's solution was begun in doses of four minims every four hours. On the next day the blood plates were fairly numerous, scattered throughout the specimen, but none occurring in clumps, as is normally seen. Many of them were large. The calcium lactate was continued, thirty grains three times a day, until April 17, when it was stopped. On April 21, the plates appeared normal in number and the improvement in the general condition was marked. The urine now showed a trace of albumin and a few hyaline casts, so the arsenic was discontinued. No further blood examination was made until April 27, when it was noted that the plates were again much reduced and a remark was made to the attending physician that more bleeding would probably occur.

On the evening of April 30 blood began to ooze from the gums. This gradually increased, reaching a maximum on May 3, when there was considerable bleeding from the gums and tongue, but not approaching in severity the original attack. There was no bleeding elsewhere. Only one dose of calcium lactate of 30 grains was given daily for the first three days, but on May 3 the dose was increased to 40 grains every three hours.

I did not see the patient until May 4, when the red cells were 4,120,000, white cells 7,000 and hemoglobin 70 per cent. The coagulation time was eight and three-quarters minutes. The plates were still nearly absent. The bleeding was much less on this day and ceased on May 5.

A blood specimen taken May 9 showed a few scattered plates. Administration of arsenic was started on this day. On May 10 the plates were much more numerous, many occurring in clumps. The next examination was on May 14, when they were perfectly normal in appearance. The calcium lactate was slowly decreased, first to 20 grains three times a day, then twice a day and to one dose daily. The improvement has been rapid and the patient is now out of doors.

This case was one of acute hemorrhagic purpura of the most severe type. The prognosis in a large proportion of these is extremely grave.

Sahli,[4] as late as 1905, made the statement that the value of calcium chlorid in hemophilia is still awaiting judgment.

In view of the cases here reported, it seems that the calcium, or probably the magnesium salts as well, offer the best hope of relief of any therapeutic measure so far advised.

We are, of course, aware that theoretically there is some danger of causing thrombi formation, but this must be slight if we determine with each case the minimum dose necessary to make the patient comfortable. Thirty or forty grains of calcium lactate once or twice a week is usually sufficient in the chronic cases. The large doses given to the patient with acute hemorrhagic purpura is evidence of the harmlessness of the drug when such doses are necessary.

The lactate is more easily absorbed by most patients than the chlorid of calcium and the taste is much more agreeable. The chlorid is nauseating to many individuals, while the lactate is a tasteless, chalk-like powder.

All the patients were also directed to drink from one to two quarts of milk a day, and some of the improvement probably results from this, for Wright and Knapp[5] have shown that this accelerates coagulation.

Summarizing the coagulation experiments in the above cases, it is seen that in two of the five it was decidedly above normal, in two others a high normal, and in the fifth a low normal. In all cases the blood must have had a high content of calcium, so the results attained are in accord with those of Wright and Knapp,[5] who demonstrated by chemical means, in 1902, that blood which contains a small amount of calcium is not always less coagulable, and also that blood containing much lime salts is not necessarily more coagulable than usual.

It has been claimed that the continued administration of calcium chlorid is not effectual in keeping up an increased coagulability of the blood, but, on the contrary, serves to lengthen the time. Consequently, its use has been confined to stopping acute hemorrhages or to prevent hemorrhage at an operation. Whether the effect of the lactate is different in this respect or the improvement is due, in the chronic cases, to the fact that the patients have taken the minimal effective dose I can not say, but concerning the improvement there can be no doubt. In no case has the coagulation time been lengthened by the lactate.

The patient in Case 1, the physician, and the patient in Case 3, the teacher of Latin, are educated men and keen observers. One of them has now been under treatment for five months, the other for four months. By regulating the calcium lactate carefully they can keep themselves infinitely more comfortable than for years.

In the course of these examinations many blood examinations were made. The one constant feature was the very small number of blood plates. Other observers have reported this, but, we believe, have not attached sufficient importance to it. Following such bloods from day to day one can not help thinking that there is a close relationship between the small number of the plates and the liability to bleed. In one of the cases, the plates suddenly disappearing, it was suggested, fully forty-eight hours before it began, that bleeding was about to recur. Blood from another patient (Case 2), taken the same day on which had occurred the most severe attack of epistaxis for months, showed a total absence of plates, whereas they had previously been present, but much below normal.

After the cessation of the bleeding arsenic was given with the idea of stimulating the hemogenetic organs. While the origin of the plates is still a much disputed point, the fact that they rapidly increased in number soon after beginning the arsenic in Case 5 would argue in favor of the bone marrow as their seat of origin.

During the last few years much has been written on the technic of counting the plates. Pratt's method of diluting the blood with a 2 per cent. solution of sodium metaphosphate and obtaining the ratio of the plates to the red cells is probably the best. While the actual enumeration is more accurate and especially valuable in reporting cases, the technic is arduous and can not be applied in many cases. Heretofore nearly all observers have agreed that little concerning the plates could be learned from a stained specimen. It must be remembered, however, that such investigations were made before the use of the azure dyes was common. We believe that by making evenly smeared, thin specimens and using a stain like Wright's, Leischmann's or the Nocht-Jenner of Hastings, which we have employed, fully as good an idea of the plates can be obtained as by counting them.

Secondary anemias, whether from hemorrhage, neoplasms or various other causes, always show a marked increase in the plates. In all the cases above reported there was at some time distinct anemia, but the plates were constantly reduced.

Another point of difference between the two varieties of anemia is that a leucocytosis is usual with secondary anemias, while it is uniformly absent with the anemia of purpura.

Keeping these points in mind, one should always be able to differentiate between a bleeding from a hemorrhagic diathesis and a hemorrhage from other causes.

---

[4] Ztschr. f. klin. Med., 1905, vol. 56, p. 264.
[5] Lancet, Dec. 6, 1902.

New Appliance

A BED LIFT.

H. H. JANEWAY, M.D.
NEW BRUNSWICK, N. J.

The form of apparatus here described has proved itself so useful in the care of many of my postoperative cases, that it has seemed as though both those connected with larger hospitals as well as many who do most of their work with limited nursing help would welcome its use. There are many forms of bed lifts manufactured by the instrument makers, but all of these, so far as I have been able to discover, are so arranged that the patient must be lifted bodily on the machine, as a patient would be lifted on a stretcher, before it can be used.

DESCRIPTION.

In this form of apparatus, however, one nurse is easily able to place three bands beneath the patient, and thus alone to lift the patient. The one passed beneath the shoulders is readily placed by first lifting one shoulder and pulling the band down underneath the back until the upper border is on a level with the axilla, then the other shoulder is lifted and the band adjusted on this side of the body: the band passing under the hips is first pushed beneath the small of the back, and then first by lifting, or slightly rolling up one hip, and then the other, it is easily pulled down until its upper border is on a level with the anterior superior iliac spine. The other two bands are very quickly put in position, one beneath the calf of the leg, and the other attached to the same end-piece as the shoulder band, under the head (Fig. 1). The placing of all these straps is very rapidly done, being only a matter of a couple of minutes, and can all be accomplished by one person. The patient can now be lifted by one nurse and lies, when the bands are in their proper places, at perfect rest on them (Fig. 2.).

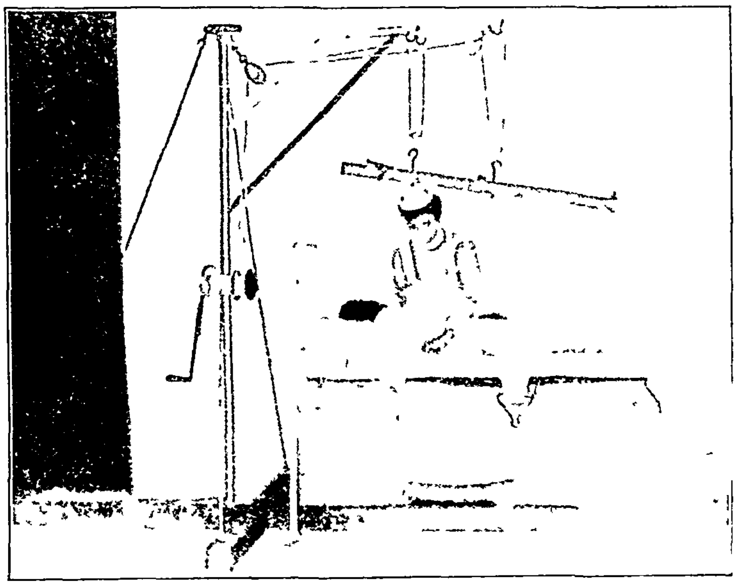


Figure 1

BENEFITS.

The nurse is then at liberty to change the bed, turn the mattress, introduce the douche pan, or thoroughly rub the patient's back. In cases of any tendency for the development of a bed-sore in a patient who has been obliged to remain for a long time on the back, instead of using one strap beneath the hips, which would rub on the sore, two straps with the bed-sore in the interval may be used, and thus the developing bed-sore readily dressed. In this case one strap passed beneath the small of the back and the other under the thigh just beneath the buttocks. It will thus be seen that any part of the patient's body can be made accessible. The patient is still at perfect rest when so lifted. This method of introducing the straps can also be used when, on account of excessive weight, it is more difficult to pull the hip strap down under the pelvis.

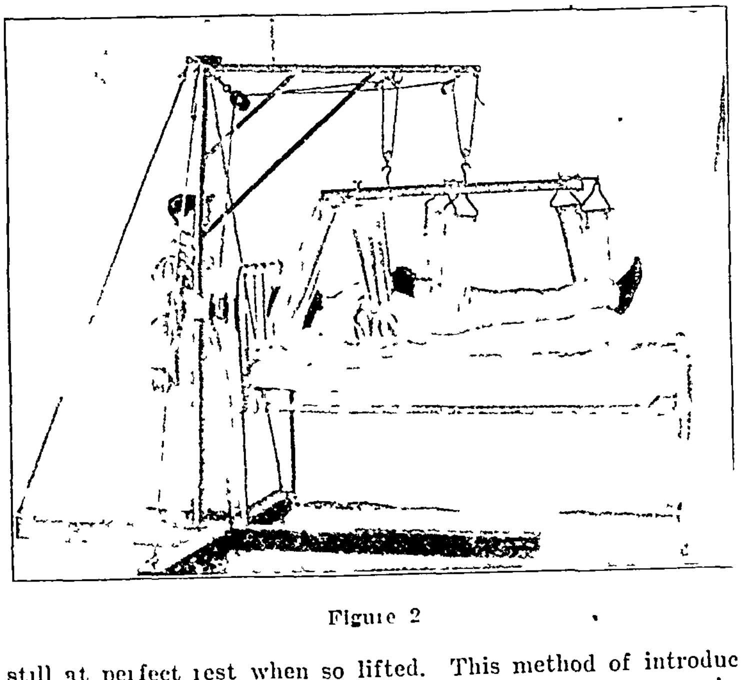


Figure 2

Aside from making nursing easier, the apparatus, in many cases, proves a veritable Godsend to the patient. The rest to the back after being lifted is very great. This is especially noticeable after operations, and is most useful for a long time after such operations as nephrorrhaphy, where it is undesirable for a patient to turn off from the back for some little time. Even after an ordinary laparotomy the possession of a way of lifting a patient off the back without strain contributes greatly to the taking of any tension off from the wound, such as might otherwise be due to excessive restlessness or too early turning. Of course, to that class of cases in which turning is very difficult, such as fracture cases and chronic illnesses, the machine proves a real blessing throughout the entire sickness.

Lately I have used the machine in cases of typhoid fever at the home of the patient with most gratifying results. By swinging the crane out to the side of the bed one nurse is able to give a regular bath without strain to herself or exertion to the patient (Fig. 3). Where the means of the family are limited so that only one nurse can be engaged, this form of bed lift has really meant to the patient the difference of having the bath treatment or going without it. Each nurse who has thus far become accustomed to the use of the lift has expressed herself enthusiastically over it.

The simplicity of the machine enables it to be manufactured at comparatively slight cost, Charles E. Dressler, 143 East Twenty-third street, having reproduced the one here presented at a most reasonable figure.

In one family in which the expense of a nurse was out of the question, and in which the mother lay for several months dying from secondary carcinoma of the liver, being absolutely bed-ridden, and before death weighing over 200 pounds, this apparatus enabled the two daughters to care for their mother, to make her comfortable, and to keep her back and bed in good condition until she died.

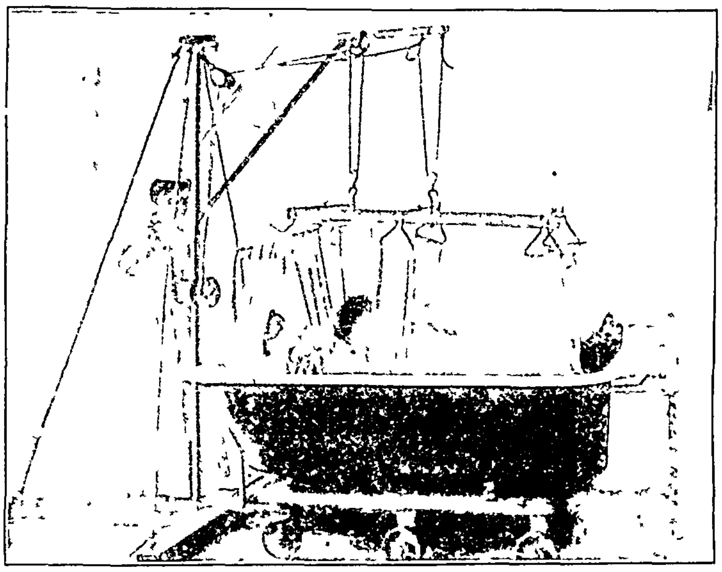


Figure 3

Clinical Note

CONGENITAL DISLOCATION OF THE HIP.

REDUCTION AT AN EARLY AGE.[†]

PRESCOTT LE BRETON, M.D.
BUFFALO, N. Y.

In cases of congenital dislocation of the hip diagnosis is possible soon after the child begins to walk, because the limp in unilateral cases or the waddle and lordosis in bilateral cases call attention to the condition.

In a certain number of cases, which are, nevertheless, congenital, dislocation does not occur until a later time. The period depends on the amount of deformity present.

---

[*] Read at a meeting of the Eighth District Branch of the Medical Society of the State of New York, Aug 17, 1906

This fact was well illustrated in the case of a child under my observation. When 2 years old she had a waddling gait and slightly increased lordosis, but not one symptom of dislocation could be discovered. Three months later the waddle and lordosis had increased and all the typical signs of a double dislocation were present. Complete luxation occurred between the examinations.

There is considerable difference of opinion as to the time that treatment should be begun in these early cases. Some orthopedists, notably Lorenz, prefer to wait until the third year, when diapers can be dispensed with. Others argue that it is best to reduce at once, in spite of the inconvenience in trying to keep the child clean. Their reasons for doing this are that it is much easier to reduce the dislocation at this time, complications are less likely, the period of treatment is short and the outcome more favorable because time has not allowed further changes to develop in the joint and neighboring soft parts. In regard to this matter Lorenz[1] says:

> Before beginning treatment, I wait not merely till the discrepancy in the gait declares itself beyond any question, but till the child is able to keep itself clean. Then, for reasons which are easily deduced, the treatment is so much simplified that I am accustomed to wait till the expiration of the second year before attempting reduction. It pleases me most if the children come to me for treatment after the expiration of the third year. By this time the unclean accompaniments following reduction are done away with; and on the other hand there is the important advantage that the greater tone of the soft parts materially enhances the stability of the primary position after the reposition is brought about, and so increases the chances for permanent reduction.

Ridlon[2] believes that those who have operated on cases under 2 years appreciate that, while it was perhaps more easy to return the head to the acetabulum than in the older cases, it was more difficult to keep it there. Wilson[3] thinks that, while it might appear on the surface that the earlier replacement is made the better it would stay, the fact exists that if the child is unable to walk a very important factor in the result is lost.

On the other hand we have the following opinions. Hoffa[4] says:

> In my opinion, the earlier children with congenital dislocation of the hip are subjected to treatment, the better will be the results.

Heusner[5] thinks that early infancy, with its energetic growth, offers the best prospects for regeneration, while delay invites rapid aggravation of the deformity.

Freiberg[6] says:

> The earliest possible replacement must be considered an important desideratum. The results amply justify the great additional care which is necessary to prevent the dressings from becoming soiled.

He reports the case of a child of 17 months of age, in which he obtained a good result. Bartow[7] reports three similar early cases, with good results. He also modifies the plaster cast in such a way as to prevent soiling. Hoffa covers the plaster cast with a solution of rubber to make it impervious to moisture.

The following case may be added to others in which treatment was instituted early:

C. S. P., male, aged 20 months, was referred by Dr. Dean, Mayville, N. Y., August, 1905. Family history, negative.

Personal History.—A first child. Labor had been prolonged for twenty-four hours, but neither force nor instruments had been employed. Baby was always in good health. For the previous two months, since he began to walk, a limp was noticed. This was so marked that it was really a lunge forward and downward on the right leg at every step. The child, however, made no complaint, but played and ran about freely.

Examination.—All the signs of a typical unilateral dislocation were found. The right leg was three-quarters of an inch shorter than the left. The trochanter was above Nelaton's line. On placing the finger on the upper edge of the trochanter and the thumb on the anterior spinous process, and then applying intermittent traction to the leg, the trochanter very plainly slid up and down under the finger, showing a lack of firm apposition between the femur and the pelvis. The right thigh was half an inch less in circumference than the left. The gluteal muscles of the right side showed a slight atrophy. There was no spasm. Motions were very free except abduction, which was slightly limited. On rotation, the trochanter did not move in the arc of a circle. On flexing and adducting the thigh, the head of the femur could be felt under the gluteal muscles. An *x*-ray picture, taken by Dr. W. W. Plummer, showed the elevation of the trochanter on the right side. It also seemed to show anteversion of the femoral neck.

Operation.—On Aug. 29, 1905, reduction was accomplished under chloroform anesthesia by the Lorenz method. The replacement was not difficult. The apposition was firm, and it was necessary to bring the thigh down from the Lorenz position to full extension before redislocation occurred, when the bone would jump suddenly back on the dorsum of the ilium. When reduced, there was the usual shortening of the hamstrings. The plaster spica was protected by rubber dam and the mother was instructed in detail about the care of the skin. A high shoe allowed free walking.

Postoperative History.—The child was sent home, returning in November, when the hip was examined and found in good condition. Dislocation did not occur even when the thigh was brought down parallel to the opposite one. In this extended position the legs were of equal length, and the firmness of the reposition argued well for the future. A new cast was applied with flexion reduced to 45 degrees, and with lessened abduction. On Feb. 3, 1906, a similar state was found, and the flexion was further reduced. On March 24, there was found for the first time a distinct fulness in front of the acetabulum near the anterior inferior spine, which disappeared during thigh flexion. The inference was plain that, owing to the deformed neck of the femur, the result would be an anterior transposition. A removable spica was made for night use, to hold the thigh during sleep in the primary position. This was continued for six weeks. A half-inch raise in the left shoe continued a slight abduction of the right leg.

Examination on July 2 showed a functional cure. The fulness could be felt, as before, in front of the acetabulum. The legs were of equal length and circumference. No limp and no increase of lordosis. The child appeared normal, and had had perfect freedom from restraint for over two months.

REMARKS.

It would seem that in this case, at least, a wait for a period of a year or over would have been a mistake. The mother did not complain of the extra trouble involved in caring for the child, and she was successful, inasmuch as no cast had to be changed because of soiling. The baby grew rapidly during its confinement, playing contentedly every day. The result obtained is the same as in the majority of cases, i. e., a functional cure by anterior transposition. Permanent replacement of the head in the acetabulum is obtained in a small minority of cases only. The frequency of this forward position of the head of the femur is supposed to be due to the anteverted neck and the shortening of the pelvi-trochanteric muscles, which latter is caused by the primary position of Lorenz. As the leg is finally brought to full extension these two factors throw the head forward out of the acetabulum.

---

[1] Lorenz: Am. Jour. Orthopedic Surgery, vol. ii, p. 231.
[2] Ridlon: Am. Jour. Orthopedic Surgery, vol. iii, p. 154.
[3] Wilson: Am. Jour. Orthopedic Surgery, vol. iii, p. 155.
[4] Hoffa: Am. Jour. Orthopedic Surgery, vol. ii, p. 239.
[5] Heusner: Phil. Med. Jour., Feb. 14, 1903, p. 309.
[6] Freiberg: Am. Med., March 5, 1904.
[7] Bartow: Am. Jour. Orthopedic Surgery, vol. iii, p. 147.

New and Non-Official Remedies

The following articles have been tentatively accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in the proposed annual, "New and Non-official Remedies." Their acceptance has been based largely on evidence supplied by the manufacturer or his agent, but to some extent on investigation made by or under the direction of the Council. Criticisms and corrections are asked for to aid in the revision of the matter before final acceptance and publication in book form.

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that so far as known it complies with the rules adopted by the Council.

W. A. PUCKNER, Secretary.

(*Continued from page 1021.*)

CREOSOTAL.

CREOSOTE CARBONATE.

Creosotal is a mixture of carbonic acid esters, analogous to guaiacol carbonate, prepared from creosote.

It is prepared by passing a current of carbonyl chloride into a solution of creosote in sodium hydroxide, and purifying the oily product by washing with weak soda solution and with water.

It is a yellowish, thick, honey-like, perfectly clear and transparent liquid, containing 92 per cent of creosote. It is odorless and has a bland oily taste. It is insoluble in water, but soluble in alcohol, ether, chloroform, benzene and in fixed oils

The addition of a few drops of ferric chloride solution to the alcoholic solution should not cause any change in color. On boiling with potassium hydroxide solution the odor of creosote is evolved.

It is incompatible with boiling alkalies.

Actions and Uses.—Creosotal has the same action as creosote, but is claimed to be non-toxic and devoid of irritant properties. It is recommended as a substitute for creosote for internal exhibition in tuberculosis, pneumonia, and as an intestinal antiseptic.

Dosage.—From 0.3 to 2.0 Gm. (5 to 30 grains) for children, to 1 to 4 Gm. (15 to 60 grains) for adults in milk, coffee, wine, cod-liver oil or emulsion. Externally it may be applied undiluted.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). Fabrik von Heyden, Radebeul, near Dresden German patent No. 58,129; U. S. patent No 501,235; U. S trademark.

DENTALONE.

A saturated solution of chloretone (which see) in a liquid composed of oil of cloves, oil of gaultheria and oil of cassia, and containing 30 per cent of chloretone.

It is a reddish-brown oily liquid of characteristic odor and taste.

Actions and Uses.—Dentalone possesses pronounced anesthetic properties and is intended for use by dentists in the treatment of exposed nerves in decayed teeth.

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark

DERMATOL.

A name applied to Bismuthi Subgallas, U. S. P.

Manufactured by Meister, Lucius & Bruening, Hoechst a. M (Victor Koechl & Co, New York).

DIABETIN.

LEVULOSE. FRUIT SUGAR. FRUCTOSE.

Diabetin is a pure, crystallized fructose (levulose), $CH_2OH\ CHOH.CHOH.CHOH.CO.CH_2OH = C_6H_{12}O_6$, absolutely free from dextrose (ordinary glucose).

It is prepared from invert sugar by precipitation as calcium salt, decomposing the precipitate with carbonic acid and crystallizing It is a colorless odorless, slightly hygroscopic crystalline powder, having a sweet taste comparable with that of ordinary cane sugar (saccharose). It is readily soluble in water and in diluted alcohol slightly soluble in alcohol, insoluble in absolute alcohol and in ether

Its aqueous solution reduces Fehling's solution and rotates the ray of polarized light to the left (—90 2)

Actions and Uses.—Levulose is metabolized in the body by other agencies than those that act on dextrose and most of the other sugars and appears to be more completely utilized by the diabetic organism than the other sugars.

It is recommended for the nutrition and for sweetening the food and drink of diabetics, in pulmonary tuberculosis, infantile malnutrition and marasmus.

Dosage.—It is given in diabetes in daily quantities of 30 to 60 Gm. (1 to 2 ounces); in grave forms of the disease the amount is reduced to from 12 to 24 Gm. (3 to 6 drams) daily.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering. Berlin (Schering & Glatz, New York). U. S. trade-mark No 21,864.

DIONIN.

ETHYL-MORPHINE HYDROCHLORIDE. CODETHYLINE HYDROCHLORIDE.

Dionin, $C_{17}H_{17}NO(OH)(OC_2H_5)HCl + H_2O = (C_{19}H_{24}O_3ClN + H_2O,)$ is the hydrochloride of the ethyl ester of morphine.

It is prepared by the action of ethyl iodide on morphine in the presence of alkali, the basic product being purified by crystallization from hot alcohol, dissolving the crystals in hydrochloric acid and crystallizing

It is a white, microscopically crystalline powder, odorless and only slightly bitter It is soluble in about 7 parts of water and in 2 parts of alcohol, insoluble in ether and in chloroform. It melts completely with decomposition at 125° C. (257° F.).

It gives the usual reactions for alkaloids It is distinguished from morphine salts by its insolubility in excess of alkali, and by not producing an immediate blue color, but gradually developing a blue green coloration, when its solution is added to dilute ferric chloride solution containing a fragment of potassium ferricyanide

It is incompatible with alkalies and their carbonates and alkaloidal reagents, as potassio-mercuric iodide, tannic acid picric acid, etc.

Actions and Uses.—It is claimed that this compound acts like morphine without producing constipation, nausea or lassitude. It is the conclusion of some good observers that it possesses no advantage over codeine. Applied to the eye, it causes a local vaso-dilation, leading to acute conjunctival edema.

Dionin is recommended to relieve pain, especially in respiratory affections, as an antispasmodic in whooping-cough, for insomnia and externally in the treatment of corneal affections, conjunctivitis, iritis, etc.

Dosage.—0.015 to 0.06 Gm. (¼ to 1 grain). Externally it is applied in 10 to 20 per cent. solutions.

Manufactured by E Merck, Darmstadt. (Merck & Co., New York) German patents Nos 102,654, 107,225, and 108,075. U S trademark.

DIURETIN.

A name applied to theobromine-sodium salicylate. which see.

Manufactured by Knoll & Co, Ludwigshafen, Germany (E Merck & Co, New York).

DUOTAL.

A name applied to Guaiacolis Carbonas, U. S. P.

Manufactured by Farbenfabriken, vorm Friedr. Bayer & Co Elberfeld, Germany (Continental Color & Chemical Co, New York) U. S. patent No. 466,913 U. S. trademark.

DUOTONOL.

A name applied to a mixture of equal parts of calcium tonol and sodium tonol. (See tonols)

Actions and Uses and Dosage.—See Glycerophosphates.

Manufactured by Chemische Fabrik auf Actien vorm E. Schering, Berlin (Schering & Glatz, New York). U. S trademark.

ELIXIR EUPNEIN.

COMPOUND ELIXIR OF HEROIN, CREOSOTE AND TERPIN HYDRATE, SCHIEFFELIN.

A preparation said to contain in each dose of 8 Cc. (2 fluidrams): heroin 0 0026 Gm. (1/24 grain), terpin hydrate 0 13 Gm (2 grains), creosote 0 3 Gm (5 grains), in a menstruum containing 30 per cent. of alcohol with glycerin and aromatic essential oils.

Actions and Uses.—From its composition it appears to be well adapted to use in chronic cough from bronchitis, etc.

Dosage.—4 to 12 Cc. (1 to 3 fluidrams).

Prepared by Schieffelin & Co., New York. U. S. trademark No. 36,419.

ELIXIR SAW PALMETTO.

ELIXIR SABALI, SANTALI, ET ZEÆ MAIDIS.

A preparation said to represent in each 30 Cc. (fluidounce): Saw palmetto berries 8 Gm. (120 grains): sandalwood 2 Gm. (30 grains: : and cornsilk 8 Gm. (120 grains).

It is stated to contain 36.7 per cent. of alcohol.

Actions and Uses.—The constituents of this preparation are credited with diuretic properties and believed to be sedative to the genitourinary tract and to exert a curative action on the inflamed mucous membrane, especially in chronic cases.

Dosage—4 to 16 Cc. (1 to 4 fluidrams) three times a day.

Prepared by Parke, Davis & Co., Detroit, Mich.

EMPYROFORM.

Empyroform is a condensation product of birch tar and formaldehyde.

According to the patent specifications birch tar is boiled with formaldehyde solution and the hot liquid poured into hydrochloric acid. When cold, the solid mass is collected and washed until free from acid.

It is a grayish-brown, almost odorless powder, insoluble in water, but readily soluble in solutions of caustic alkalies, in acetone, and in chloroform.

Actions and Uses.—Empyroform is an antipruritic, sedative and desiccant. It is said to be superior to tar and free from irritant or toxic effects.

It is claimed to be useful in all stages of eczema, psoriasis, lichen, urticaria, prurigo, pityriasis, etc.

Dosage.—It is applied as a 5 to 10 per cent. ointment, 10 to 20 per cent. zinc paste, 10 to 20 per cent. tincture, and 37.5 per cent. suspension.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York). U. S. patent No. 761,260. U. S. trademark No. 43,419.

EPICARIN.

OXYNAPHTHYL-ORTHO-OXYTOLUIC ACID.

Epicarin, $C_6H_3(OH)(COOH)(CH_2C_{10}H_6OH)2:3:1 = C_{18}H_{14}O_4$, is β-naphthol-hydroxy-toluic acid.

It is obtained by the action of chlormethyl-salicylic acid on a solution of b-naphthol, in glacial acetic acid, thus:

$$C_6H_3(OH)(COOH)(CH_2Cl) + C_{10}H_7OH = C_6H_3(OH)(COOH)(CH_2C_{10}H_6OH)+HCl$$

It forms colorless or yellowish needles, melting at 190° to 195° C. (380° to 389° F.), difficultly soluble in water, but easily soluble in alcohol, ether, acetone, and in soaps. It dissolves in oils on the addition of a little ether. It has the character of a strong acid, forming well crystallized salts, which, however, are sparingly soluble in water, particularly the sodium salt. On exposure to air it acquires a reddish color due to oxidation; if it is then recrystallized from glacial acetic acid, colorless crystals are again obtained which melt at 166° C. (338° F.). These, however, retain a little acetic acid, but lose this by heating at 120° C. (248° F.).

The alcoholic solution of epicarin produces an intense blue color with ferric chloride. When heated with concentrated sulphuric acid, a red-brown solution, having a vivid green fluorescence, is produced. If shaken with chloroform and solution of potassium hydroxide, a yellowish color, changing later to yellowish green is developed, thus distinguishing epicarin from b-naphthol, which produces a deep blue color under the same conditions.

Being a strong acid it is incompatible with alkaline hydroxides or carbonates, especially those of sodium with which it forms an almost insoluble salt. It should not be exposed to the air, which colors it red.

Actions and Uses.—Epicarin is a non-poisonous antiseptic and parasiticide. Administered internally, it is excreted mostly undecomposed. It has been found useful in the treatment of skin diseases, particularly scabies, tinea tonsurans, prurigo and certain forms of eczema.

Dosage.—It is used externally only in the form of 5 to 20 per cent. ointment, with petrolatum or wool fat (lanolin) as base, or in the form of oily or alcoholic solutions (10 per cent.).

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent applied for.

ERYTHROL TETRANITRATE.

ERYTHROL NITRATE. TETRANITROL.

Erythrol tetranitrate, $C_4H_6(NO_3)_4=C_4H_6O_{12}N_4$, is the tetranitrate of erythrite or butane-tetrol, $C_4H_6(OH)_4$.

It is obtained by the nitration of the tetratomic alcohol erythrite.

It forms colorless crystalline scales, insoluble in cold water, readily soluble in alcohol, melting at 61° C. (141.8° F.). On percussion it explodes much like nitroglycerin.

Actions and Uses.—It is a vasodilator and antispasmodic, like nitroglycerin. Its action is slower and more lasting; it begins in 15 minutes and persists for three or four hours.

It is recommended in angina pectoris and cardiac diseases. It is reported as especially useful as a prophylactic in preventing anginal pain.

Dosage.—Because of its explosiveness it is marketed in the form of tablets, each containing 0.03 Gm. (½ grain). One or two tablets every four to six hours.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). German patent No. 81,664.

ETHYLENEDIAMINE.

AETHYLENDIAMIN. AETHYLENE DIAMINE. ETHANE DIAMINE. *a,b*-DIAMINO-ETHANE.

Ethylenediamine, $C_2H_4(NH_2)_2$, is a substitution compound of ethylene and ammonia.

It is prepared by heating ethylene bromide with an excess of alcoholic ammonia for 12 hours at 100° C. (212° F.), removing the ammonium bromide formed, by filtration, evaporating the filtrate to dryness, distilling the residue with potassium hydroxide, and collecting the fraction distilling between 115° and 130° C. (239° to 266° F.) and bringing the liquid by successive purifications to a constant boiling point at 117° C. (242.6° F.).

It is a clear, colorless, thick liquid, having a sp. gr. 0.97, boiling at 117° C. (242.6° F.), without decomposition, having a strong alkaline reaction, an ammoniacal odor and a caustic taste. It is freely soluble in water, and may be mixed with cresols, but is not miscible with benzene (benzol) or ether. It dissolves albumin very readily, even when boiled.

Being a strong base its incompatibilities are about the same as those of sodium hydroxide.

Actions and Uses.—It is said to be non-corrosive. It is recommended as an albumin solvent for the solution of false membranes in diphtheria and similar affections of the mucous membranes. It is recommended for use in the form of kresamine (which see).

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York).

EUCAINE.

The "Eucaines" are two closely allied synthetic bases, which were originally differentiated as eucaine "A" and eucaine "B," but are now designated as "Alpha-eucaine" and "Beta-eucaine" respectively, alpha-eucaine being a synthetic derivative of triacetonamine, while beta-eucaine is a synthetic derivative of vinyl-diacetonekalmine. Both of these bases are supplied as hydrochlorides and are recommended as substitutes for cocaine, over which they are claimed to have certain advantages.

They are described under alpha-eucaine hydrochloride and beta-eucaine hydrochloride.

EUCALOIDS.

A name applied to gelatine capsules, each containing 0.3 Cc. (5 minims) of pure oil of eucalyptus.

Dosage.—1 to 2 globules three or four times a day.

Prepared by Edward G. Binz, Los Angeles, Cal.

(To be continued.)

Travel Notes

DISEASES AND HOSPITALS OF AFRICA

NICHOLAS SENN, M.D.
Professor of Surgery in the University of Chicago; Professor and Head of the Surgical Department, Rush Medical College.
CHICAGO.

(*Continued from page 1051.*)

THE HOSPITALS OF PRETORIA AND CAPE TOWN.

Pretoria, the former proud capital of the republic of South Africa, is only two hours distant from Johannesburg by rail. There is nothing to be seen here which would remind one of the terrible struggle which the brave Boers made in defending their rights and in maintaining their independence. Their leader, the late President Kruger, sleeps now in the little cemetery, surrounded by members of his family, who preceded him in death, and blue violets are blooming on his grave, symbolic of the purity of his private and public life. The city remains the same as before the war, but the magnificent public buildings, built and paid for by the Boers, are now in possession of the new administration. The Boers, a law-abiding people, have accepted their defeat in humility. Their worldy losses will be repaired in course of time, but the wounds inflicted by the cruel war will never heal under the present methods of foreign administration.

The city has about 25,000 inhabitants and is beautifully situated in a valley, surrounded by picturesque mountain scenery. It is an ideal capital city without the noise, smoke, and disturbances of manufacturing establishments. It has wide well-paved streets, many beautiful residences, very interesting botanic and zoologic gardens combined, good public schools, fine churches and a most excellent little hospital.

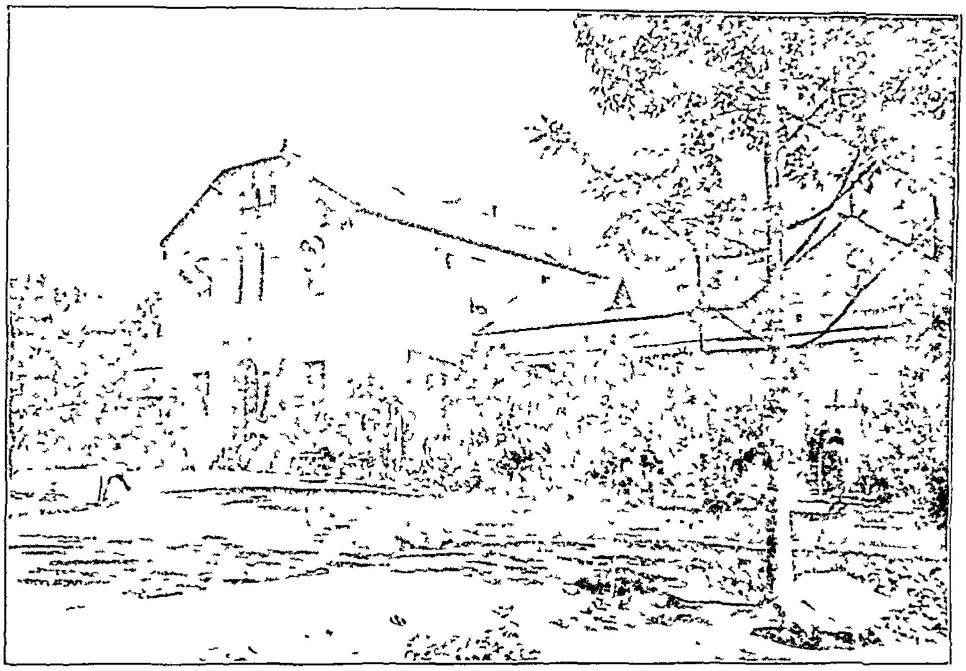


Fig. 1.—Pretoria Hospital.

THE PRETORIA HOSPITAL.

This hospital was completed, as indicated by an inscription on the corner-stone laid by President S. J. P. Kruger, June 21, 1890. The hospital, built of brick on the pavilion plan, has accommodations for 170 Europeans and 80 natives (Fig. 1.). It is charmingly located in a quiet outlying part of the city on an eminence and in the midst of large grounds, tastefully laid out and ornamented with evergreen trees, shrubs and a profusion of flowers. The general wards are airy, well-lighted and everywhere the most scrupulous cleanliness prevails. The snow-white linen, the cheery fires in open grates, the happy contented faces of the patients, white and black, old and young, suggest that the management of the institution is in competent hands (Fig. 3.). The nursing is in charge of five English sisters, assisted by 45 pupil nurses, who remain in training three years before they are permitted to apply for the final examinations. The corridors and walls are paved with large squares of artificial stone admirably adapted for this purpose. Dr. G. Thornton, the medical superintendent, lives in a comfortable, well-appointed house in the same grounds. The nurses' home, recently completed, is what such an institution should be, a real home for the nurses with all the comforts of a home. Dr. Thornton and his wife, formerly a trained nurse, devote their whole time and attention to the best interests of the institution and the comfort and well-being of its inmates. Dr. Thornton is a careful, conscientious practitioner and thoroughly devoted to his patients, regardless of their color. The natives in this hospital receive more consideration and care than in any other hospital visited. In the female wards for natives, I saw a patient about 35 years old, the subject of advanced carcinoma of the uterus. The woman was a half caste. Recently a case of molluscum fibrosum was observed in the hospital and through the courtesy of Dr. Thornton I make use of a photograph which he took himself (Fig. 2.).

Oil of cinnamon in three-drop doses, in emulsion, is the routine medication in typhoid fever. The mortality of this disease in the hospital does not exceed ten per cent., certainly an enviable record. In 3 out of 24 cases of perforation of the bowel in typhoid cases, life was saved by operative interference. Pneumonia here, as in all other hospitals in Central South Africa, is one of the most frequent and fatal of all diseases. The mortality ranges between 10 and 40 per cent.

From the report of the hospital for 1904-1905, I have gleaned a number of important facts. The operating theater is not what it should be, and a recommendation to rebuild it is one of the first items in the report. The *x*-ray apparatus and room are in good working condition, as shown by a number of specimen illustrations exhibited by Dr. Thornton. Reference to venereal diseases is made as follows: "Our experience shows that venereal diseases, both among the males and females, are becoming increasingly prevalent in the natives, thereby constituting a grave danger to public health, seeing that so many are employed in domestic service." Few sufferers of this class of disease are actually admitted into the hospital, but many are treated as "out-patients." The whole number of patients in this hospital during the year was 1,697, of whom 929 were Europeans and 768 natives. Only fifty-two cases of malaria came under treatment, and all the patients recovered. Of 140 patients with pneumonia, 33 died, and of the total cases, 97 were natives, with 28 deaths. Twenty-four natives suffering from tuberculosis of the lungs were admitted and 11 of these died. Of 33 cases of scurvy occurring, the disease proved fatal in one. Four cases of leprosy and one of filariasis, all in natives, were observed during the year. Among the native patients the diagnosis of malignant tumor appears 6 times and of benign tumor, strangely, only once. Concerning the malignant tumors, no distinction is made between sarcoma and carcinoma.

The farther south I travel and the more the natives are bleached out by the admixture of European blood, the more I find them receptive to the diseases of the whites, and this applies with special force to appendicitis and malignant disease. My observations in different parts of the world have convinced me that the nearer the human race approaches the animals in eating and habits of life the more they are exempt from malignant disease and appendicitis.

Two cases of appendicitis occurring in natives are recorded in the report, of which one proved fatal. Of 5 cases of gunshot wounds occurring in natives, all recovered. Dr. A. W. Sanders is the visiting surgeon and exercises a general supervision over the treatment of surgical cases and performs most of the major operations. During the year, 361 operations were performed, covering nearly the entire field of surgery, and of these 20 patients died. The greatest mortality was in cases of abscess of the liver, 6 cases with 4 deaths and operations for malignant tumors, 7 cases with 2 deaths.

TRANSVAAL LEPER SETTLEMENT.

Five miles from Pretoria in a valley surrounded by hills is the Transvaal Leper Settlement, founded by the Boers long before the war and now administered by the new government. It is a large village made up of comfortable little houses in separate groups for males and females, whites and blacks. The administration building, in which reside the superintendent and physician and supervising trained nurse, and in which the pharmacy and offices are located, are modern, substantial structures. The number of lepers who reside here now is 330, of which 280 are natives and 50 whites, most of the latter are Boers of the lower classes. The village is laid out in streets and includes a neat little Dutch Reformed church, school house and a building for public amusements. Small vegetable and flower gardens contribute much to mitigate the picture of human woe and suffering seen on all sides. Segregation is aimed at but not strictly enforced. Friends and visitors are admitted on stated days and by obtaining permission the lepers can leave the enclosure but must return the same evening. The settlement is under government control and all expenses are paid out of the public fund. Patients are paid a small sum for their work, if they choose to employ a part of their time in that way. This is an excellent thing, as useful employment chases away melancholy and with the little money earned the patients can buy for themselves such things as will make them more comfortable and happy. All the patients were decently dressed, their surroundings were clean and their general appearance indicated that they are well cared for and make the best of their misfortune. I saw here many cases in which the disease had produced frightful ravages, both in the tubercular and in the anesthetic forms. The treatment pursued is entirely symptomatic, no vaunted specifics are tried. Miss A. M. Whiteman, an English trained nurse, is the ministering angel in this valley of human suffering and misery. The patients respect and adore her and she is devoted to them. She speaks Dutch and all the native tongues and all come to her when they are in trouble, or in need of her services, which she so cheerfully and willingly renders them.

Fig 2.—A native patient in Pretoria Hospital with fibroma molluscum

"For man to assist man is to be a God.
This is the path to eternal glory."

Plinius Major.

CAPE TOWN.

Cape Town is the metropolis of South Africa and the capital of Cape Colony. It is situated at the base of Table Mountain on the south-west shore of Table Bay. It was founded by the Dutch in 1562, and ceded to Great Britain in 1815. The location of the city is picturesque in the highest degree. It faces the broad Table Bay and behind it are the almost perpendicular huge gray granite walls of Table Mountain. The city was laid out by its Dutch founders with mathematical precision, all its principal streets running in straight lines from the mountain to the sea and being crossed again by the other less important ones at right angles. It is the easiest city of its size for the stranger to find his way without a guide; he can not possibly get lost as the city occupies the narrow but long belt of land hemmed in on one side by the mountains and on the other side by the bay. Its length, with the many suburbs, must be at least ten miles, while its width does not exceed anywhere three-quarters of a mile. The main streets and sidewalks are wide and well paved and kept in good repair and thoroughly clean. The perfect system of sewerage, the abundant supply of pure water from the mountains and the superb climate make it one of the healthiest cities in the world. It is lighted by electricity and the two-story electric tramway cars promote easy transportation to all parts of the city and suburbs.

The principal business street is Adderly street, which is to Cape Town what State street is to Chicago or Broadway to New York. At the business end of this street a broad street-like walk lined on both sides with venerable oak trees leads to the base of the mountain. On the right side of the magnificent walk are the Botanical Gardens and South African Museum. In these gardens will be found nearly all the principal trees and shrubs indigenous to Africa, all labeled in botanical terms. It is a pity that the common names by which the people know the trees and shrubs are not given in the legends. The museum contains a fine collection of wild animals of Africa, well mounted and kept in excellent condition. The collections of minerals, birds and insects are very large and well arranged. The oldest landmark in the city is the castle, an old-fashioned fortress on the very edge of the bay, built by the Boers in 1660; in its almost medieval Dutch architecture, it forms a curious sight among the modern surroundings.

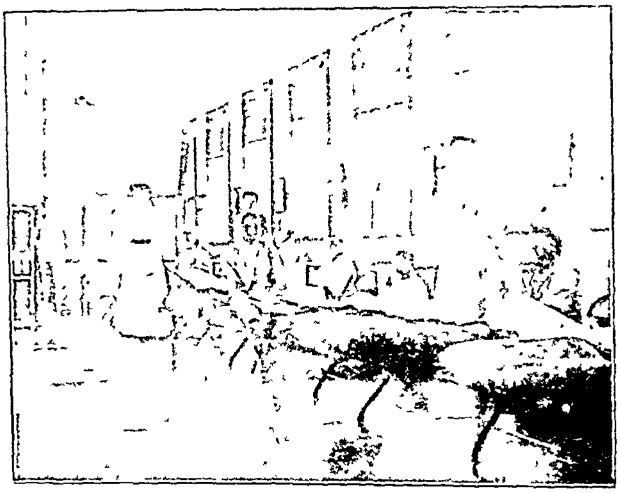


Fig. 3.—Native ward in Pretoria Hospital.

Table mountain furnishes the botanist with the greatest variety of interesting and rare specimens of plant life. Cape Colony has the largest variety of flowering plants to be found in any country, some 7,000 having been classified. On Table mountain and its slopes and ravines, 400 different varieties of heather have been found and analyzed. This small shrub has a profusion of small tubular flowers in vivid colors, red, yellow and white. These flowers are sold in large bunches on the street for a shilling each. The most interesting tree on Table mountain is the silver tree (*Leucadendron argenteum*) with its long narrow, willow-like shining silvery leaves arranged in dense imbricated clusters at the very end of the thick, abruptly ending twigs. The fruit is a cone the size of a duck egg.

(To be continued.)

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price.........Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, OCTOBER 6, 1906.

THE INTESTINAL ORIGIN OF PULMONARY TUBERCULOSIS.

It is the general belief that pulmonary tuberculosis in the overwhelming majority of cases is the result of inhalation of tubercle bacilli. This seems such a natural and easy way to account for tuberculosis of the lungs. This explanation is supported by numerous experiments on animals in which forced inspiration of bacilli appeared to be followed by direct localization of bacilli in the lungs. The inhalation theory is also in harmony with the well-known fact that living bacilli occur in the dust and in droplets of sputum about tuberculous patients that use little or no care to prevent contamination of their surroundings; and with the further fact that commonly there is no lesion discoverable elsewhere in the body to which one can trace the pulmonary disease.

Nevertheless important objections are being urged against the inhalation theory of pulmonary tuberculosis, especially in its extreme form, which tends to minimize the dangers of the alimentary route of infection. Behring's contention that the milk of tuberculous cows is the most important source of tuberculosis is so well known that details need not be discussed. The recent anatomic studies by Harbitz[1] of the distribution of tuberculous lesions, especially in children, afford many points in support of the view that tuberculosis of the lungs and adjacent lymph nodes may result from invasion through the digestive tract. It is not feasible to bring forward in detail all the facts and interpretations bearing on this question. Suffice it to state that until recently there existed no really satisfactory evidence of an experimental nature showing that tubercle bacilli introduced in the digestive tract actually are primarily or rapidly localized in the lungs and thoracic lymph nodes. The experiments of Calmette and Guérin[2] of Lille appear to furnish important information in regard to this phase of the question. These investigators find that in cattle and goats the introduction of a single quantity of virulent bacilli by means of the esophageal tube, particular care being taken to avoid contamination of the respiratory tract, is followed regularly in from 30 to 45 days by the development of subpleural and peribronchiolar tubercles at the tops and anterior borders of the lungs. Later the alveoli may be invaded from extension of the lesions which primarily are intracapillary. As others have shown before, the bacilli can pass through the walls of the stomach and intestines without leaving any lesions; on reaching the chyle vessels the bacilli are taken up by leucocytes and conveyed to the regional lymph nodes, whence they may escape into the thoracic duct without necessarily causing lesions until they reach the capillaries of the lungs and the thoracic lymph nodes as well as, but more rarely, elsewhere. As localization occurs, Calmette and Guérin believe that the leucocytes which carry the bacilli become immobilized by toxic bacillary products. They also point out that previous experiments which appeared to demonstrate tuberculous invasion by the respiratory tract are open to the objection that the bacilli introduced in reality were absorbed by the digestive tract.

Assuming that the experimental results here outlined in great brevity are applicable to human beings, it necessarily follows that particular care must be taken to avoid all possible sources of contamination of food and drink by tubercle bacilli. Dust, sputum droplets, contaminated flies, soiled hands and articles of various kinds may be the means of introducing bacilli of human origin into food and drink. Efforts should also be directed to exclude the carrying of bacilli into the mouth in more direct ways. The possibility that tuberculosis, pulmonary and otherwise, in reality is of intestinal origin oftener than expected hitherto clearly does not tend to essentially alter in any way the usual preventive measures now in practice. As to milk and other products of tuberculous cows, our attitude, on the whole, will remain unchanged and the practical procedures will depend, as heretofore, on the view taken as to the disputed question of the infectivity for human beings of bovine tubercle bacilli.

Calmette and Guérin have shown also that animals may survive the single introduction of tubercle bacilli into the stomach, the resulting pulmonary lesions healing completely. Such animals are now immune to tuberculosis. The bearing of this demonstration on the human disease we propose to discuss later.

THE NEW BUILDINGS OF THE HARVARD MEDICAL SCHOOL.

It is the general opinion of all who have had the pleasure of seeing them—and this includes the visitors to the memorable Boston session of the American Medical Association—that the new buildings of the Harvard Medical School are the most beautiful academic or public buildings in America. It is pleasant to note that, in their construction, usefulness for the varied purposes of a great medical school has not in any way been sacrificed in order to have architectural beauty and distinction. The architects have succeeded admirably in combining perfection from the utilitarian as well as from

---

1. Jour. Infectious Dis., 1905, vol. ii, p 143.
2. Ann. de l'Inst. Pasteur, 1905, vol. xix, and 1906, vol. xx, 609

the architectural point of view. As is reported in detail in this issue,[1] these buildings have now been dedicated with appropriate ceremonies to the purpose for which they were designed and they are now in use for the education of medical students and for medical investigation. Medicine has received a large addition to its resources in this country and all friends of medical progress unite in grateful thanks to the persons who gave the money necessary and in congratulating Harvard Medical School on the completeness and permanence of this part of its external equipment.

So far as the buildings necessary for instruction and investigation in the sciences fundamental to clinical medicine are concerned, this school is now in a most favorable and enviable situation. But medical education and investigation require much more than great buildings. In order that buildings like those at Harvard can be put to their highest usefulness, there must be liberal endowments to pay the men who are to work in them and to furnish the equipment and supplies with which to work. Undoubtedly the same spirit of altruism that prompted wealthy men and women to build the monumental structures just dedicated to medicine in Boston will result in adequate recognition of the choice opportunity and privilege here offered to put more money to the best possible use. And it should be emphasized that an institution requiring the bachelor's degree for entrance on medical work, and possessing such an incomparable group of buildings as Harvard now does, will be expected to do far more than to carry on a high grade of undergraduate medical instruction. Here, if anywhere, should flourish scientific investigation in medicine and special opportunities should be offered not only recognized successful investigators, but also those who promise to develop into such.

Finally, a word in regard to clinical medicine at Harvard. The buildings just dedicated do not provide for clinical work. From recent public utterances by members of the Harvard faculty, it appears that at present the facilities for clinical work, though known to be of high order, are not altogether satisfactory. The hospitals and dispensaries at present are far removed from the medical school proper. This in itself is undesirable. We see, then, that the new Harvard buildings are built for the future to which the friends of Harvard look with hope for adequate endowment, on the one hand, and better provision for clinical medicine, on the other. May these hopes be realized soon.

THE ALCOHOL QUESTION.

At the recent meeting of the British Medical Association the vexed question of the value of alcohol generally and of its use as a drug was dealt with at various times. We referred two weeks ago to the decreased use of alcohol and the increased use of milk in the London hospitals, as reported by Sir Victor Horsley at the luncheon given by the Canadian Temperance Union. Sir Victor Horsley, continuing this subject, said that he not only regards alcohol as the most potent bane of civilization and the cause of physical and mental deterioration of a not inconsiderable portion of the British race, but, further, that he is able to see very little good in alcohol as a drug. In cases of shock subsequent to a severe operation he recommends the employment of another drug than alcohol. The latter he condemns in unsparing terms.

Prof. Sims Woodhead, of Cambridge University, England, took the ground that if it can be proved that alcohol is a remedial agent in any disease, let it be used, but until it has been so proved it should not be employed. He claimed that up to the present time experiments in this direction have obtained such comparatively slight results that they afford no basis for asserting that alcohol has any definite value as a drug. Indeed, investigators working under seemingly like conditions have come to conclusions so diametrically opposed that they have effected little more than to bring confusion to the minds of seekers after the truth.

In the section on therapeutics, Dr. Blackader, of McGill University, expressed the opinion that the action of the heart stimulated by alcohol has been overestimated and that it is sometimes feeble and transitory. The action on the nervous system is more complex, but it is certainly depressing on the centers of judgment, discernment and self-control. Alcohol in medicinal doses increases the bactericidal powers of the blood, while a long series of experiments has shown that large doses in infectious diseases increase the power of the disease poison. It has a food value and, used in fevers and in cases of exhaustion or of indigestion, may be of marked benefit, as it makes no tax on the organs of digestion, but, on the contrary, favors secretion and favors action on the hepatic cells.

Dr. Meltzer, of New York, was far more decided in his support of alcohol as a drug. He asserted that those who opposed its use in disease were those who had never made practical experiments, and that he placed no value on statistics. He drew attention to the fact that, as a rule, German investigators do not believe in the harmfulness of alcohol. In his opinion, alcohol, judiciously used, is capable of stimulating the heart to activity and supports immunity in infectious diseases. Alcohol in health may be a poison, but in disease it is beneficial.

Dr. W. E. Dixon, Cambridge, England, pointed out that the heart rate is no criterion as to whether alcohol stimulates the circulation, that the accelerating action of alcohol on heart rate is due to its stimulating effect on the medulla. According to Dr. Dixon the conflicting results obtained by different investigators are due to the fact that they undertake their experiments on animals under the influence of an anesthetic, which greatly neutralizes the action of the alcohol. Another point to which he drew attention was that in order to accelerate the action of the heart it is necessary to give an exact small dose of alcohol, and that but a slight increase over this quantity produces decided slowing. In his opinion, if a man who is suffering from disease is accustomed to the use of alcohol he should not be completely restricted from its use when sick, and a man suffering from delirium tremens should be given alcohol.

---

[1] See page 1113.

Dr. Osborne, of New Haven, thought that alcohol should be regarded purely as a drug and that its well-known harmfulness when used as a beverage to excess should be set aside when discussing its therapeutic action. There are no pathologic disturbances when alcohol is used as a drug, and, therefore, it should be thus used in cases which call for its employment. He held that it is harmful when employed solely as a cardiac stimulant, merely acting as a whip to an already overstrained system. The opinion was practically unanimous that the employment of alcohol in cases of delirium tremens should be condemned, and Dr. Rose Bradford, of London, took the occasion to warn medical men against a custom which prevails somewhat widely of recommending alcohol to convalescent patients, and especially to women.

The discussion has not increased our knowledge on the subject to any appreciable degree. To all intents and purposes, so far as the elucidation of moot features of the alcohol question is concerned, we are where we were.

FOOTBALL FATALITIES.

The newspapers are already announcing deaths from football, and yet the season is only just opened. It was hoped that the modification of the rules effected by the intercollegiate committee last winter would be adopted and that they would eliminate many of the injuries and all of the serious accidents. Apparently in some places they have not been adopted or have failed to accomplish this purpose. Such modifications as have been made were only as the result of a large amount of pressure brought to bear on the rules committee by medical journals and newspapers, by the protests of faculties and alumni and by the popular feeling that no sport is worth so many lives as football has been costing in recent years.

It is rather difficult for most people to understand why there should be so much insistence among college men on the necessity for continuing Rugby football since, as the game has developed here in America, it has become inevitably bound up with so many rough features. Radical modification of the rules, such as would make the game much less rough, has always been opposed on the grounds that this would so lessen the interest in the sport as to cause it to cease to be the drawing card for large audiences that it now is. It is well known that college athletics derive their main support from the large gate receipts obtained at football games. To the physician it seems utterly absurd to urge that a question of money such as this should stand in the way of modification in a university sport that is intended to save lives and to prevent accidents that produce permanent injury. But even the argument itself with regard to gate receipts on the drawing power of football, irrational, indeed ludicrous as it is, loses all its force when the records of the attendance at English football games are carefully studied. The open game of football in England, which has nothing like the fatalities of our American Rugby, draws even larger crowds. The record attendance at a London football game is over 110,000 and frequently there are 50,000 people present. It is evident then that this argument which has so far had so much weight with college men is simply founded on the lack of knowledge of football conditions elsewhere.

If we are to have this year a repetition or an approximation of the awful record of recent years and of last year especially, it will practically amount to a conviction of our university authorities of lack of power to control certain of the vicious elements in student human nature. If gate receipts are to continue to be a supposed justification for rough play that draws a crowd, then the epithet of Maxim Gorky, which created so much resentment last summer, can not be gainsaid, i. e., that we are an essentially brutal people, since we delight in stories of cruelty and bloodshed in newspapers and find pleasure in spectacles in which life is put in danger.

PATHOLOGISTS IN HOSPITALS FOR INSANE.

The movement to provide for the services of pathologists in hospitals for the insane appears to be extending. Thus Illinois has arranged[1] for civil service examinations to select such assistants. While the complete plan for this important addition to the service of these institutions has not been made public (so far as we are aware), it is evidently the intention to make the laboratory at one of the hospitals the central laboratory through which the work in the other institutions may be stimulated and in a measure directed and coördinated. At all events, largely, we believe, as the result of the activities of the Board of Charities under the high-minded guidance of its president, Dr. Frank Billings, a new factor enters into the work of the Illinois hospitals.

In the aggregate the general result of this new departure should be to put the daily routine work of the institutions on a higher plane than can be hoped for in the complete absence of the stimulus and interest that come from study and investigation. It has frequently been pointed out that the best clinical work, diagnostic and therapeutic, is done in those clinics that associate the treatment of disease with teaching and investigation. The patients, then, are sure to receive almost immediate benefit, mental and physical, from the introduction of progressive methods of study in the hospitals for the insane.

---

[1] The Journal A. M. A., Sept. 15, 1906, page 868.

In the next place, continued, careful study of the rich material in these institutions increases, little by little, our knowledge of insanity and of nervous and other diseases, and among the facts thus gathered many may prove to have far-reaching future importance. Furthermore, the establishment of positions like those now in mind should increase the real opportunities for research, and the more numerous and attractive such opportunities the more likely that men with the power of accomplishment will seek them, and the greater the chance of securing for psychiatry the occasional man of genius who can make discoveries and develop new lines of research.

Undoubtedly, the two most important steps that a state hospital for insane can take is to divorce its management from the baneful influence of "politics" and to provide the men and the means to place its psychiatry on a firm, progressive basis. Unless the first step is taken, it is exceedingly difficult, if not impossible, to take the second.

THE SCIENCE AND ART OF EATING.

Our Athenian contemporary, Professor Bedelar Maturin, has a hobby which he rides on every possible occasion—the exploitation of the work which Brillat-Savarin wrote a century ago on "The Physiology of Taste." The latter believed that human beings should cultivate the wholesome enjoyment of life; that the education of the tastes and the appetites should be an index of the degree of civilization. The man of good instincts and refinement should know how to eat and drink, to converse (a lost art to-day), to appreciate a beautiful landscape, to enjoy the fragrant flowers—in all things to deport himself sanely and soberly. Like the much-maligned Epicurus of old, Savarin was an exceedingly temperate man. They both comprehended well, wise philosophers as they were, that true pleasure lay not in gluttony and other inordinate appetites, but in the knowledge and practice of reasonable conduct in all the manifold aspects of existence. "The love of good living is not merely a physical, but an intellectual and a moral quality, as well, almost deserving to rank as a virtue." We would omit the "almost." Savarin's book (which de Balzac termed "adorable") was written with a double object in view: "to lay down the fundamental theory of gastronomy, so that she would take her place among the sciences in that rank to which she has an incontestable right," and "to define with precision what must be understood by the love of good living, so that for all time that social quality may be kept apart from gluttony and intemperance, with which many have absurdly confounded it." Lest the reader imagine Savarin's work to be lacking in profundity, we quote the following: "The most momentous decisions of personal and of national life are made at table." "But for life the universe were nothing; and all that has life requires nourishment." "The fate of nations depends on how they are fed." "The man of sense and culture alone understands eating." "A good dinner is but little dearer than a bad one." These and other aphorisms in the book are exceedingly practical: "One should eat slowly and in minute portions;" this is, in essence, the Fletcherism of today. "Digestion, of all the bodily functions, has most influence on the *morale* of the individual." "The great majority of us eat and drink too much;" is not this dictum announced to-day with trumpets, as if its utterance had never before been essential? Savarin was probably the first exponent of the modern science and art of gastronomy, which has been enormously developed since his day. But among the many tomes on food and dietetics now extant, among the mass of literature on practical cookery to be found in the magazines, no writing will be found more scientific or more useful than that which this genial and kindly Frenchman, a century ago, left us for a legacy of good cheer. If it were more read and its precepts followed, there would be less dyspepsia, less crime and fewer divorces.

THE OPERATIVE TREATMENT OF VARICOSE VEINS OF THE LEG.

Varicose veins in the lower extremities occur as the result of varied conditions, some inflammatory, some of less definite character. It is probable that hereditary tendency is of etiologic significance in this connection. The disorder is due to incompetency of the valves whose function it is to prevent the stagnation of blood in vessels, the contents of which must be propelled in opposition to the force of gravity. Phlebitis, complicating or following pregnancy, or some operative procedure or acute infection, is the cause in a considerable proportion of cases. The erect posture long maintained in predisposed individuals will account for another group of cases. Palliation can be afforded in many instances by means of the recumbent decubitus or elevation of the affected member or members, or by the use of elastic constriction, but operative intervention becomes necessary for radical relief, the object being to effect occlusion of the saphenous vein. By one method of procedure the superficial veins of the affected part are divided between ligatures, while by another the saphenous vein and its branches are excised throughout a varying extent, and by a third the vein is divided between ligatures. In a recent communication dealing with this subject Dr. Robert T. Miller[1] reports the results of operative treatment in 128 cases of varicose veins of the lower extremities and associated disorders observed at the surgical clinic of the Johns Hopkins Hospital, some of which were followed for periods of ten years and more. One hundred and seven of the cases occurred in whites, and 21 in colored individuals; 73 in males and 55 in females. The largest number of cases in any decade developed between the years of 20 and 29, namely 41; 81 developed before 40, and 37 after. The disorder appears thus not to be a manifestation of senility. In 40 cases a definite history of phlebitis was obtained; pregnancy was responsible for the condition in 25, typhoid fever in 9, erysipelas in 2, pneumonia in 1, acute enteritis in 2, operation in 1. In 88 cases no inflammatory factor could be ascertained; among the causes assigned were constipation, excessive walking or standing, pelvic tumor. The right leg was involved alone in 21 cases, the left alone in 25; both legs were involved in 74, and in the majority of these the left was the more affected. The leg was involved alone in 91 instances, the leg and the thigh together in 25, the thigh alone in 1. In addition to the favorable results from the operation named first it has the advantage of avoiding division of large cutaneous nerve-trunks, with secondary anesthesia or hyperesthesia. Also there is no subsequent edema. Further, the operation can be performed readily under local anesthesia. Finally, there is less likelihood of recurrence of the condition after adequate excision than after ligation. Pulmonary embolism—characterized by sudden dyspnea, cyanosis, tachycardia, signs of collapse, elevation of temperature—may occur as a complication of any of the modes of operation mentioned.

---

[1] Bull. Johns Hopkins Hosp., September, 1906, p. 289.

THE PASSING OF DOWIE.

In its editorial notice of "The Passing of Dowie" the Chicago *Tribune* remarks that there is for him in his downfall perhaps more a feeling of pity than exultation, even among those who have regarded him from the outset as among the chiefest of impostors. To a certain extent this is true, the fall is a severe one, but, after all, it is not more, or even as much, as the man deserves or as his dupes have suffered. It is said that, while he deceived others, he was also himself deceived, that he had faith in himself and was the victim of a delusion. That may be the case. A man is capable of creating a delusion in himself, as he may repeat a lie so often that he finally actually believes it is truth. Dowie may have been deluded, but there was certainly a vast amount of method in his delusions. During the past dozen years or more he has been appropriating the savings of thousands of honest dupes, and what he has not spent of it in personal extravagance and luxury he has claimed as his peculiar personal property, making his self-styled prophetship a matter of the most outrageous personal profit. There have been many of his kind. The starting of a new religion is an old confidence game, but there have been very few in which the financial motive has been more prominent and which have been worked out with such success. We might except Eddyism, perhaps, of which it is hard to say whether the female figurehead or the very evident working syndicate are the true "profits." That, too, must come to its end, though it may develop into a sort of religious sect, as has Mormonism, or may at least continue in a more or less modified form, for some time to come. Even now its doctrines are something like the so-called British constitution, modified to meet every case that may arise. Its projectors and managers do not apparently, like Dowie, rake in the savings of the poor. They take the shekels of the well-to-do, for whom their system is specially elaborated, with its catering to the lust of the eye and the pride of life and its easy-going denial of sin and pain. In some respects, therefore, Dowie was the more contemptible sinner, and his earlier passing out of pernicious activity is the less to be regretted. His sect for a while may continue, but the medical fallacies and absurdities, on which it was so largely based and which have been, to a great extent, responsible for so much individual human suffering, have already practically disappeared.

MEDICAL FALLACIES.

In the last number of the *American Magazine* is an article on popular medical fallacies by Dr. L. K. Hirshberg which, while rather nihilistic in tone, is, on the whole, commendable. A number of popularly accepted propositions with regard to medical matters are directly contradicted. Virchow used to say that all of the medical fallacies accepted generally by the people have been at one time doctrines recognized by physicians. Undoubtedly many of the present-day popular medical fallacies even yet are accepted by certain physicians, and it is this that helps to keep them alive. For instance, there are still physicians who say that boils are always a manifestation of a blood disease. While it is true that a run-down condition will predispose to the appearance of boils, these are practically always due to infection from without. It is suggested that men suffer more from boils on the neck than do women, because the former wear starched collars that are likely to produce lesions through which infective agents find their way beneath the skin. The possibility of taking cold in a boil or in a cut or wound, which is believed in by most people, is thrown out as one of the old-fashioned notions that we are through with. Certain popular remedies, such as sage and other old-time teas, are discussed, and whatever efficacy they have is attributed to the true cause—the hot water employed in making them. Of course, the mental suggestion that something has been done which is likely to be beneficial removes the despondency that comes with illness of any kind and helps to restore the patient to normal conditions. In the same way the vaunted efficiency of many liniments is attributed rather to the rubbing associated with their application than to any remedial virtue that there may be in the drugs of which the liniments are composed. The popular impression that there is a specific remedy for each disease and that nothing but this specific will cure it is at the bottom of many of these fallacies. This was an old-time medical notion that has not as yet gone out entirely, but whose disappearance will do much to make popular medical ideas more sane and sensible.

THE EXISTENCE OF HYDROPHOBIA.

The lay press of late has been considerably interested in certain allegations published in the organ of the humane societies that no such disease as hydrophobia exists, and the idea is naturally acceptable. The eminent physicians who are quoted as questioning the existence of the disease can properly speak from their own experience and have a right to any honest opinion they may hold on the matter, but to support such claims by saying, as some of them are said to do, that they know of no other physician or surgeon who has seen a case, would imply a more limited acquaintance with the leading men of the profession and their work than ought to be the case. There have been plenty of cases of hydrophobia published in the medical press by eminently respectable authorities whose word and judgment on any other disease would not be questioned—and why should they be in this? Some of these cases reported leave no ground for supposing that any mental element entered into the causation of the symptoms, the victims even dying without any recognition whatever of the true nature of their disease. If there are any of the obscurer nervous diseases that are clearly established as clinical entities, hydrophobia is one, and its comparative rarity, for which we ought to be sufficiently thankful, does not in any way affect the fact that such a disease exists.

Medical News

ALABAMA.

College Opens.—The forty-first annual session of the Medical College of Alabama, Mobile, opened October 3.

Hospital Notes.—Jefferson County Medical Society has endorsed the proposed charity hospital to be erected in Birmingham, and a committee has been appointed to frame a bill providing for the erection and to decide whether bonds shall be issued to cover the cost of constructing and maintaining the hospital.

State Did Not Make Out Its Case.—In the case of the state of Alabama against Drs. Philander S. Boyd and Breckinridge J. Duckett Florence, charged with manslaughter due to the use of a too strong solution of carbolic acid, the judge closed the case of the state September 20 by taking it out of the hands of the jury and dismissing the defendants, as the experts agreed that the death was not due to carbolic acid poisoning.

CALIFORNIA.

Fined for Selling Impure Milk.—Emmanuel Fagundes, Oakland, was fined $100 in the police court September 14 for selling milk which was found to contain two-fifths added water.

To Equip Laboratories.—The San Francisco board of health has called on the board of supervisors to provide $6.000 for the equipment of the chemical and bacteriologic laboratories of the board.

Diphtheria.—The Grant public school, Oakland, was closed September 15 by order of the board of health on account of an epidemic of diphtheria among the pupils. More than 20 cases have been reported during the last few days.

Isolation of Contagious Diseases.—The board of supervisors of San Francisco has passed the ordinance proposed by the health board, authorizing the latter to remove at its discretion patients suffering from contagious disease.

Hospital News.—Mrs. Herbert Kraft has given a site for a hospital at Red Bluff, to be organized under the name of the St. Elizabeth's Hospital and to be conducted by the Sisters of Mercy.——A county hospital for San José County is soon to be erected at a cost of $65.000 on the site of the old county building, San José, which was destroyed by the earthquake last April.——A hospital is planned at Grass Valley, to be under the charge of Dr. John T. Jones.

Health Report.—The nineteenth biennial report of the State Board of Health was submitted to the governor September 15. The chief recommendations of the board are a larger appropriation for the State Board of Health, the more rigid enforcement of sanitation at summer resorts, and that vaccination ordinances be more strictly enforced. Many and extensive improvements are recommended for the State University at Berkeley, where sewerage is reported to be bad. A hospital for the students is also recommended. During the year 20,909 births were reported, equivalent to 11.7 per 1,000. The deaths during the same period were 27.026.

Coroner's Report.—During the fiscal year 1905-06 the coroner of San Francisco County reports 2,196 deaths, 428 of which were due to the earthquake and fire of April 18. The remainder are classed as follows: 1,200 from natural causes, 340 from accident, 177 from suicide, 36 from homicide, and in 11 cases the cause of death was undetermined. Of the suicides 142 were males and 45 females; illness was given as the cause of the greatest number of suicides, drinking next, insanity third, and finally financial troubles. By occupations laborers headed the list, housewives came next and clerks and bartenders third and fourth respectively. No lawyers or physicians appeared on the suicide list.

COLORADO.

August Deaths.—The total number of deaths in the state during August was 856, equivalent to an annual death rate of 15.52 per 1,000. Of the deaths 46 were due to typhoid fever, 9 to diphtheria and 8 to scarlet fever.

Comparative Morbidity During August.—During August 461 cases of typhoid fever were reported, an increase of 291 cases as compared with July; 91 cases of scarlet fever, a decrease of 14 cases; 28 cases of diphtheria, a decrease of 3 cases, and 4 cases of smallpox, a decrease of 26, as compared with the previous month.

Physicians Injured.—Dr. H. Calvin Lefurgey, Durango, while making a professional call, was thrown from his buggy and suffered a comminuted fracture of the left arm.——Dr. Wilbur W. Bulette, Pueblo, while driving with Dr. William H. Campbell, few miles north of Pueblo, was thrown from the buggy in a runaway accident and sustained severe contusions. He was removed to the Pueblo Hospital.

New Hospital.—A new dispensary building is to be erected in connection with the Denver and Gross Medical College, to cost about $16.000. Land has been secured adjoining the present laboratory building and work will soon be initiated.——Ground was broken September 20 for a sanatorium to accommodate 52 patients at Glenwood Springs, to be under the charge of Dr. William F. Berry.

DISTRICT OF COLUMBIA.

Personal.—Dr. George F. Simpson, inspector in the district health department, has resigned to take effect September 28.——Dr. T. S. Vincent, Washington, fell from the second story window of a hotel at Braddock Heights, Md., and broke his right leg at the ankle.

Health Conditions.—In the report of the health department for the week ended September 22 it was announced that the improvement in typhoid fever conditions was more pronounced than at the close of the previous week. There was reported a decrease in the number of cases from 288 to 280. During the week 37 new cases were reported and 45 patients discharged, with only 2 deaths having occurred. No new outbreak of smallpox was reported. The total deaths numbered 127, as compared with 108 during the previous week and 104 as compared with the corresponding week of 1905. The principal causes of mortality were: Consumption, 16; heart disease, 13; nephritis, 10; malignant disease and diarrheal diseases, each 9; pneumonia, 6, and cerebral hemorrhage and bronchitis, each 4.

ILLINOIS.

Hospital to be Built.—The plans and specifications for the Graham Hospital, Canton, are nearly completed and construction will be begun this fall.

Personal.—Dr. Josiah M. Cody, Tremont, has been elected physician for the Tazewell County Farm.——Dr. Coleman J. Eads, Oquawka, has been obliged to discontinue practice on account of ill-health, and has sold his property to Dr. C. E. Kaufmann.——Dr. James W. Sanders, Decatur, has been elected a member of the board of directors of the Bethsaida Hospital Association.

Pills Prohibited.—At a meeting of the Streator city council, September 19, an ordinance was passed prohibiting the posting of any handbills or other advertising matter for "patent medicines," etc., in any street or public place in Streator, and also prohibiting the distribution of any samples of medicine within the city limits. The fine for violation of this ordinance is not less than $5 nor more than $50 for each offense.

Chicago.

Automobile for Health Department.—The council finance committee, on September 28, authorized the health commissioner to purchase an automobile for the emergency inspection work.

Personal.—Dr. James Alexander Harvey returned from Berlin, October 1.——Dr. and Mrs. Arthur R. Elliott are expected to return from Europe this week.——Mr. John Lynn Thomas, Cardiff, Wales, spent a few days in Chicago last week and was entertained by the surgeons of the city.

Building Commissioner Enforces Regulations.—By order of the building commissioner, on September 27, the three upper floors of the Jenner Medical College were closed for several hours, on account of failure to comply with the provisions of the building laws. The commissioner ordered two fire escapes put in the building, more exits cut through and exit signs placed.

Health of the City.—During the week ended September 29, 44 fewer deaths from all causes were reported than during the week previous, although there were 15 more deaths from violence. The important death causes showing decreases were: Acute intestinal diseases, 23; consumption, 21; apoplexy, 6; typhoid fever, 5; cancer, 3; heart disease, 2, and diphtheria, 1. The total number of deaths for the week was 538, equivalent to an annual death rate of 13.69 per 1,000. There were 57 more deaths than for the corresponding week of 1905. The principal death causes were: Acute intestinal diseases, 99; consumption, 57; violence (including suicide), 54; nephritis, 47; pneumonia, 37; heart diseases, 34, and cancer, 22. There were 12 deaths reported from suicide, an increase of 7 over the preceding week.

IOWA.

Site for Hospital.—It is reported that the state board of control has decided to locate the State Tuberculosis Sanatorium on the Grant farm, near Fort Dodge.

Typhoid Fever at Dubuque.—Owing to the prevalence of typhoid fever in Dubuque, the people have been warned to boil the drinking water. The disease is said to be prevalent in all sections of the city.

Bacteriologic Report.—The secretary of the State Board of Health reports that during August 382 examinations were made in the bacteriologic laboratory. Of these 85 were for diphtheria, 69 for typhoid fever and 184 for tuberculosis.

Medical College Opens.—The Sioux City College of Medicine and Surgery opened for its annual session September 19 with addresses by Dr. George S. Browning and the dean, Dr. Hial S. Wheeler. The following faculty changes were reported: Dr. R. M. Conmey, professor of physiology, and Dr. G. E. Barr, assistant in hygiene.

Personal.—Dr. and Mrs. William Cammack, Salem, have started for London en route for South Africa, where they enter the service of the American Board of Commissioners for Foreign Missions.——Dr. A. W. Crary, Boone, has been made a medical instructor in the medical department of the State University, Iowa City.

Hospital Board Meeting.—At the annual meeting of the board of the Eleanor Moore Hospital, Boone, held September 17, the following directors were elected: Drs. Alpheus A. Deering, George D. Rowe, J. Henry Nordstrom, George H. Stanger, Lemuel A. Barrett, Evalene Peo, Clyde W. Payne and Kate S. Harpell. During the year more than 2,000 patients were treated and more than 100 operations performed.

KENTUCKY.

Money for Sanatorium.—At a meeting of the board of directors of the Kentucky Anti-tuberculosis Association, September 21, it was decided to attempt to raise the $11,000, the balance necessary for the erection of the proposed tuberculosis sanatorium.

New Hospital.—A contract for the erection of the building of the Good Samaritan Hospital, Lexington, has been let. The building will cost $12,000 when completed.——The new King's Daughters' Hospital, Shelbyville, was formally opened September 19. The building is three stories high with 12 rooms, including two wards of three beds each.

Personal.—Dr. Florence Meder, who succeeds Dr. Minnie C. Dunlap at the Eastern Kentucky Asylum for the Insane, Lexington, has arrived and assumes her new duties as third assistant physician. Dr. Dunlap has been transferred to the Western Kentucky Asylum for the Insane, Hopkinsville.——Dr. Donald R. Jacob has been elected president, and Dr. Oliver H. Kelsall, secretary, of the Louisville Academy of Medicine, and Dr. Gavin C. Fulton has been re-elected treasurer of the organization.

Typhoid Fever and Diphtheria.—Mercer County is said to have an epidemic of typhoid fever, and it is reported that there are at least 200 cases in the county and in Harrodsburg.——An epidemic of typhoid fever is said to be raging at Hindman.——Diphtheria in malignant form is reported to be epidemic in the western part of Cumberland County.——Typhoid fever is reported to be epidemic and on the increase in the eastern part of Bath County. Diphtheria is also reported to be prevalent throughout the county.

MARYLAND.

New Hospital.—Ground was broken September 19 for the new wing of the Frederick City Hospital, to be erected by Mrs. Margaret Hood as a memorial to her late husband, James Miflin Hood.

Automobile Accident.—Drs. Henry P. Fahrney, Frederick, and Morris A. Birely, Thurmont, while making a professional call in an automobile belonging to Dr. Fahrney, were seriously injured by the overturning of the machine at the foot of a steep hill.

State Society Meeting.—The semi-annual meeting of the Medical and Chirurgical Faculty of Maryland was held September 27 and 28. In the address of welcome, the governor suggested that the portraits of two of the most eminent founders of the faculty be placed in the senate chamber. Dr. Charles M. Ellis, Elkton, offered a resolution suggesting that $200 be appropriated to cover the expense. A committee was selected composed of Drs. Charles M. Ellis, Elkton; Eugene F. Cordell, William H. Welch, Herbert Harlan and Robert W. Johnson, Baltimore, to select five or more names from the 101 founders to be submitted to the faculty, which will at that time select the two founders to be honored.

Baltimore.

New Municipal Hospital.—The members of the Municipal Hospital commission have decided on the plans of the building to be constructed for the isolation hospital, for which $25,000 was appropriated by the city council.

University Reorganized.—The medical faculty of the Baltimore University School of Medicine has reorganized and an effort will be made to secure re-establishment of membership in the Association of American Medical Colleges. It is said that a new hospital and medical school building is to be erected in the northern part of Baltimore and that the institution will open under the new régime this fall. The organization of a dental school is also being considered.

Typhoid and Diphtheria Increase.—The report of the health department for the week ended September 22 shows an increase in the number of cases of diphtheria and typhoid fever as compared with the corresponding week of last year. Deaths from all causes for the week were 212, or 16 more than for the corresponding period of last year. Of these, consumption caused 29; diarrhea, 24; Bright's disease, 16; cancer, 13; heart disease, 12, and congenital disability, 10. Twenty-four cases of diphtheria were reported and 51 cases of typhoid fever, 12 more than for the corresponding week of last year.

Personal.—Dr. and Mrs. John C. Hemmeter have been the guests of Dr. C. K. Pell, head of the department of medicine of the University of Amsterdam, and Prof. K. Schapp, Groningen, where they attended the opening ceremonies of the university.——Dr. Ira Remsen has returned after a summer in Maine.——Dr. Howard A. Kelly was given the honorary degree of LL.D. at the four hundredth anniversary of the foundation of the Aberdeen University.——Dr. Albertus Cotton has returned from Europe.——Dr. Llewellys F. Barker was taken ill at the opening exercises of the Harvard Medical School and was taken to a hospital at Brookline, Mass.

MASSACHUSETTS.

Leper Alleged to be Cured.—It is reported that Mary Barros, a leper in Wareham, after a year's incarceration and two years' surveillance at the State Leper Colony, Penikese Island, is to be released as cured.

School Inspectors Appointed.—Drs. William Galvin, Henry J. Millard, Philip Potter, George A. Fagan, Alfred A. Harper, Wilfred A. Brosseau and Ransford D. Canedy have been appointed inspectors of schools at North Adams.

New Hospital.—The plans have been accepted for the new Franklin County Public Hospital, to be erected in Greenfield at a cost of about $40,000. The building first to be erected will contain accommodations for about 30 patients.

Personal.—Thomas J. Bean, Lowell, has been made a member of the board of health, vice Dr. William B. Jackson.——Dr. Frank L. Morse has been appointed city physician of Somerville, but will continue also as bacteriologist of the city.——Dr. Laura A. C. Hughes, Boston, was elected president of the Spanish-American War Nurses' Association, September 6.

Pure Milk for Infants.—The Cambridge Medical Improvement Society has finished its first year's experiment of providing pure and sanitary milk for infants, during the summer season, which closed September 15. The city appropriated

$1,000 for the experiment, $800 of which was expended. During the year 35,000 bottles of modified milk were distributed under the auspices of the city.

Close of Floating Hospital Season.—The trustees of the Boston Floating Hospital announce the close of the season's work and issue a circular giving the comparative statistics for the period of four weeks on the old and new boats, showing the increased work that the institution has been able to accomplish with the new boat.

	Old boat.	New boat.
Number of days' care given to permanent patients..	1,436	2,958
Number of trips made by day patients	1,298	1,086
Number of trips made by mothers of sick children..	1,151	1,349
Number of trips made by well children under six years of age, who could not be left at home......	477	690

Medical School Inspection.—The Springfield Board of Health has had printed a circular containing rules for medical inspection, which details the duty of inspectors as follows: The identification of pupils requiring medical aid; the detection of children suffering from communicable diseases; the detection of other than communicable diseases and ailments, and the detection of defective eyesight, hearing or other disabilities. It is directed in the circular that the following described children should be sent to the inspectors on Monday and Thursday morning of each week: Every child returning to school after an illness or absence from unknown cause without a certificate from the board of health; every child suffering from contagious or infectious disease, or showing signs of ill health, and every child who returns to school after having been excluded by the medical inspectors. Children showing signs of the following diseases are to be sent home immediately: Smallpox, scarlet fever, measles, chickenpox, tuberculosis, diphtheria, influenza, tonsillitis, whooping-cough, pediculosis, scabies, trachoma, ringworm and impetigo contagiosa.

MICHIGAN.

Interurban Railway Surgeons.—The Michigan United Railway has established a complete surgical system over its lines and has appointed the following surgeons: Lansing, Dr. Harry A. Haze, surgeon-in-chief; alternate, Dr. Robert E. Miller; St. Johns, Dr. Samuel E. Gillman; alternate, Dr. W. A. Scott; Jackson, Dr. C. G. Carnell; alternate, Dr. H. Duane Brown; Parma, Dr. Vene D. Farmer; Albion, Dr. Alfred J. Abbott; alternate, Dr. George C. Hafford; Marshall, Dr. L. A. Harmon; alternate, Dr. Frank M. Foote; Battle Creek, Dr. William S. Shipp; alternate, Dr. Clarence S. Gorsline; Augusta, Dr. Charles E. Doyle, and Kalamazoo, Dr. Albert B Cornell; alternate, Dr. Leonard H. Stewart.

MINNESOTA.

Hospital Nearly Ready.—The new Bethesda Hospital, Crookston, is expected to be ready for occupancy about October 1. The building is of white stone, two stories in height, and is equipped with all modern conveniences.

Diphtheria.—Diphtheria in virulent form is reported at Sauk Center.——It is reported that diphtheria exists in three families near East Park, White Bear Lake, and complaint has been made to the board of health that the members of the afflicted families are not quarantined.

Personal.—Dr. Henry M. Bracken, secretary of the State Board of Health, has been elected president of the National Conference of Licensing Embalmers' Boards.——Dr. George H. Freeman, senior interne at the City Hospital, St. Paul, has been selected as senior assistant at the St. Peter State Hospital for the Insane, vice Dr. C. J. Tuomy.

Red Cross Organized.—The Sons of Veterans of Minneapolis have organized a Minneapolis Red Cross Society, with the following officers: Major Thomas T. Wareham, surgeon-in-chief; Capt. George D. Bentley, assistant surgeon; Lieut. W. J. Burns, passed assistant surgeon, and Drs. W. G. Dawson and D. Edmond Smith, contract surgeons.

NEW YORK.

Bequeaths Library.—By the will of the late Dr. Louis A. Weigel, Rochester, his medical library is bequeathed to the Reynolds Library, Rochester.

Boil Water.—The health commissioner of Buffalo announces the presence of the colon bacillus in the city water, enjoins that all drinking water be boiled, and emphasizes the need of a filtration plant.

Personal.—Dr. and Mrs. Henry Adsit, Hornell, have sailed for Italy.——Dr. John L. Heffron, Syracuse, returned from abroad September 15.——Dr. J. Wilson Poucher, Poughkeepsie, returned from Europe, September 18.

New Hospital.—The Ilion Emergency Hospital has been incorporated with a board of 11 directors. An anonymous benefactor has donated $25,000 for the erection of the building, and an acre of land has been offered as a site for the new institution.

Society Changes Name.—The Practitioners' Society of Rochester, composed of women, has been authorized by the Supreme Court to change its name to the Blackwell Society of Rochester, in honor of Dr. Elizabeth Blackwell, the first woman graduate of medicine in America. The change became operative September 8.

After-Care of the Insane—Five months ago the State Charities Aid Association started an organized movement for the after-care of the insane. It had been observed that many persons discharged as cured of insanity soon relapsed when returned to their former surroundings and mode of life; this organization endeavors to follow such patients and to place them in such employment and amid such surroundings as will prevent a relapse. It is claimed that there is a large field for this kind of work and that the organization is accomplishing much good.

Hospital Notes.—The Buffalo General Hospital trustees have purchased for $85,000, 118 feet frontage on Goodrich Street, east on Ellicott, which backs up on the land now owned by the hospital. On this site will be built the Children's Hospital, for which Dr. De Villo W. Harrington made a bequest estimated from $75,000 to $100,000.——The common council of Lockport has directed the city clerk to advertise for bids for a new city hospital to cost $15,000. The city has donated the site and $5,000; $5,000 has been raised by subscription and the same amount was donated by the late Augustus Keep.

Illiteracy.—The second annual report of the state educational department shows that 58 of the 61 counties have a lower proportion of illiterates than New York City in their population over ten years of age. In the state there are 54 illiterates per 1,000 population, and in New York City 81. The average number of illiterates per 1,000 is 59 for the entire state, and there is one illiterate to every 18 voters. Eighty per cent. of the illiterates are of foreign birth, but there are more illiterate children of native than of foreign parentage. There is dire need for the enforcement of the law compelling children to attend school in the rural districts.

New York City.

Bequests.—The will of the late Henry I. Barbey gives St. Luke's Hospital $25,000, the Society of the New York Hospital $20,000, and the Home for Incurables attached to St. Luke's Hospital $10,000.

Health Board Raids Building.—As repeated warnings from the health department to the effect that certain sanitary changes in the building at the corner of Broadway and Canal Street had been disregarded, the police officers of the department drove tenants and help from the building and plumbers were immediately put to work to remedy defects.

Personal.—Dr. Kirke Stanley is at the Harlem Hospital, recovering from a fracture of the base of the skull, supposed to have been due to an assault by a robber, as when he was found his watch and money were gone.——Dr. Charles Senter has been appointed temporary head of the Bronx health department, vice Dr. Gerald M. V. Shiel.——Dr. Robert J. Morrison, Brooklyn, sailed for Europe September 15.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending September 22, 354 cases of tuberculosis, with 154 deaths; 154 cases of diphtheria, with 16 deaths; 134 cases of typhoid fever, with 29 deaths; 59 cases of scarlet fever, with 2 deaths; 55 cases of measles, with 2 deaths; 30 cases of whooping-cough, with 8 deaths; 5 cases of cerebrospinal meningitis, with 7 deaths; and 9 cases of varicella, a total of 800 cases, with 218 deaths.

The Season's Milk Report.—The Nathan Strauss pasteurized milk depots have just completed their fourteenth season. The quantity of milk distributed during the past summer exceeds that of any other season by 471,855 bottles. The total number of bottles given gratis or for which the sum of one cent was paid was 3,142,252, and the number of glasses drunk on piers, from booths and in parks was 1,078,405. The increased demand for this milk makes it evident that the task of supplying modified milk to tenement house babies will soon be beyond the bounds of private charity and it will devolve on the municipality to shoulder the burden. Mr. Strauss has just signed contracts for the erection of a new building on East Thirty-second Street, to be devoted exclusively to the modification and pasteurization of milk.

Typhoid Fever.—From Jan. 1, 1906, up to Sept. 12, 928 cases of typhoid fever have been reported to the sanitary bureau. During the week ending September 8 the greatest number of cases occurred, 81 in all, while during the week ending June 5 there were only 5 cases. The greatest number of deaths occurred during the week ending August 25, 23 being the total. Up to July 14 the number of living cases reported did not exceed 20. Of all the cases reported a large per cent. were residents of tenement houses, and mostly house workers. The department of health examined the blood and urine in over 80 per cent. of the cases reported; in 50 per cent. of the cases the Widal test showed positive and the diazo in 33 per cent. In the majority of the cases the spleen was enlarged and rose spots were present. Water showed as the most common cause in nearly 31 per cent; next, milk, 25 per cent.; while oysters were the least common cause, representing 5 per cent. The board of health of Brooklyn announces that from August 14 to Sept. 2, 1905, the number of cases of typhoid fever reported in Brooklyn was 689, while during the same period this year only 173 cases were reported. This is attributed by the board to the campaign of education instituted last year.

NEW JERSEY.

State Asked to Withhold Allowance.—The commissioner of charities and correction made a report to the governor, September 21, in which he advised the state to withhold the allowance for the support of the insane patients in the Salem County almshouse until proper accommodations have been provided for the patients.

Personal.—Dr. Charles Dingee has been appointed city physician of Burlington, vice Dr. Edmund Eastwood.——Dr. Jacob Hempstead, Paterson, succeeds Dr. Anthony as house physician to the Muhlenberg Hospital, Plainfield, October 1.——Dr. William C. Boone, who resigned from active service on the medical board of the Muhlenberg Hospital in July, after a service of more than 25 years, was appointed consulting physician of the hospital, September 10.——Dr. J. Edward Blair, Burlington, was operated on for appendicitis at the German Hospital, Philadelphia, September 3.——Dr. Albion C. Christian.. Irvington, has returned from a trip to the Pacific Coast.

PENNSYLVANIA.

Typhoid Fever in Pittsburg.—Twenty new cases of typhoid fever were reported to the Pittsburg bureau of health for the 24 hours ended at noon, September 26.

Personal.—Dr. Joseph H. Bittinger has been chosen president; Dr. John D. Keller, vice-president, and G. Harry Jordy, secretary and treasurer, of the Physicians' Club of Hanover. ——Dr. William J. Hanlon, Mount Carmel, is confined to his house on account of illness.

Must Secure Burial Permits.—The board of health of Chester has decided to take legal steps against funeral directors who do not secure burial permits before interring bodies. It is said that a number of physicians of Chester fail to issue necessary certificates, especially in cases of death from diphtheria.

Chi Club Organized.—A number of physicians of Scranton and vicinity, graduates of the Medico-Chirurgical College of Philadelphia, organized a "Chi Club," September 20. The following officers were elected: Dr. Gilbert D Murray, Scranton, president; Drs. Charles P. Stackhouse, Wilkesbarre; William B. Stricker, Nanticoke, and Frank J. Wagner, Carbondale, vice-presidents, and Dr. Thomas Monie, Archbald, secretary and treasurer.

Philadelphia.

August Vital Statistics.—The report of the division of vital statistics for the bureau of health for August shows that 1,905 deaths and 2.604 births were reported.

Druggist Fined for Selling Morphin.—William Frost, a drug clerk, who was arrested, charged with selling morphin without a prescription and without placing a poison label on the bottle, was found guilty and sentenced to pay a fine of $50.

Pure-Food Prosecutions.—Last week, for the first time since the inauguration of the pure-food crusade by Dr. Warren, several cases were tried in the quarter sessions court. Ten men accused of food adulteration pleaded guilty before Judge Martin and were each fined $50 and costs.

Personal.—Dr. Hobart A. Hare narrowly escaped serious injury by being thrown from his automobile in a collision with a trolley car, September 26.——Dr. Howard T. Karsner sailed for Europe, September 28.——Drs. Harris A. Slocum, Ralph W. Seiss, George B. McClellan, A. Allison O'Daniel, James M. Anders and John C. Heisler have returned from Europe.

Physical Culture in the Public Schools.—The superintendent of the city schools, in his report to the board of education, recommends and approves systematic physical culture in the public schools throughout the city. His report provides for the appointment of a director at $2,500, and as many assistants at $1,000 a year each as may be needed. Dr. Brumbaugh mentioned that under the act of March 8, 1901, such instruction is obligatory.

Health Report.—The total number of deaths reported for the week ended September 29 reached 439. This is an increase of 17 over the number reported last week, and an increase of 35 over the number reported in the corresponding period of last year. The principal causes of death were: Typhoid fever, 17; pertussis, 8; diphtheria, 13; consumption, 52; cancer, 18; apoplexy, 23; heart disease, 35; acute respiratory disease, 38; enteritis, 56; appendicitis, 6; Bright's disease, 27; congenital debility, 14; suicide, 3; accidents, 15, and marasmus, 6. There were 180 cases of contagious disease reported, with 30 deaths, as compared with 190 cases and 20 deaths reported in the preceding week.

Medical Inspection for August.—The report of the division of medical inspection of the bureau of health for the month of August shows that the number of inspections made, excluding schools, was 3.416, and that 494 fumigations were ordered. Eighteen cases were examined for special diagnosis; 182 cultures were taken, 106 injections of antitoxin were administered and 473 vaccinations were performed. In the division of milk inspection 5 584 inspections were made, 107,760 quarts of milk were examined and 40 quarts condemned. The report of the bacteriologic laboratory shows that 606 diphtheria cultures were examined, 552 Widal reactions were performed, 669 quarts of milk were examined, and 92 specimens of sputum. The laboratory supplied 1,708.500 units of antitoxin.

College Openings.—The annual opening of Jefferson Medical College for the sessions was held in the college laboratories, September 24. The introductory student address was delivered by Prof. Howard Hansell.——All the departments of the Medico-Chirurgical College were opened for the session of 1906-07 with the usual exercises, September 25. The annual introductory address was delivered by Dr. John V. Shoemaker, who spoke on "The Scientific Foundation of Modern Treatment of Disease."——The one hundred and sixty-seventh annual session of the University of Pennsylvania began September 28. The opening exercises were held in the new medical laboratories, and the opening address was delivered by Dr. Charles Frazier, dean of the medical department.——The fifty-seventh annual opening exercises of the Woman's Medical College of Pennsylvania were held in the college building, September 26. Dr Clara Marshall, the dean, made the introductory address, and the annual oration was delivered by the professor of pathology, Dr. Aloysius O. J. Kelly.

TENNESSEE.

Hospital Addition.—An addition is to be erected to the St. Thomas Hospital, Nashville, increasing the capacity of the hospital about 60 per cent., at a cost of $60,000.

Communicable Diseases.—The opening of the public schools of Gallatin has been suspended on account of diphtheria.——An epidemic of typhoid fever has developed in the east section of Owingsville, where thirty cases are said to exist.

To Hunt Down Illegal Practitioners.—The Dickson County Medical Association, at a recent meeting, resolved to bring to justice every individual in Dickson County endeavoring to vend or practice medicine contrary to the statutes of the state.

Personal.—Dr. J. M. Trout, Jackson, is in New York City on his way to Europe, where he expects to remain about a year.——Dr. Frank S. Raymond, Memphis, president of the Memphis Board of Health, has applied for leave of absence on account of ill health.

College Opens.—Meharry Medical College, the Department of Medicine of Walden University, Nashville, opened for its thirty-first annual session, September 5. The faculty has been reinforced by the addition of Prof. C. H. Elliot, who will take charge of the chemical laboratory.

Academy Incorporated.—The Nashville Academy of Medicine was incorporated September 5 by Drs. Marvin M. Cullom, G. C. Savage, Lucius E. Burch, William R. Sifford, Holland M. Tigert and Charles A. Robertson. The purpose of the organization is said to be interchange of ideas and a general furtherance of the general science of medicine.

TEXAS.

Smallpox.—Four cases of smallpox have been discovered near Tyler. The patients have been isolated and are under quarantine.

Asylum Completes Year Without Deficit.—The superintendent of the Northern Texas Hospital for the Insane, Terrell, reports that for the sixth consecutive year, the business of the institution has been so managed that the appropriations made by the legislature have been sufficient to meet the expenses of the institution.

Physicians Must Register.—At a meeting of the San Antonio Board of Health, it was decided to enforce the old ordinance requiring every physician in the city to register at the office of the board. The purpose of the ordinance is to make it possible for the board to find at any time if men not qualified practice or pose as physicians.

Hospital Notes.—It is generally agreed that the new hospital for the Santa Fe system is to be located at Temple.——The Alpha Sanitarium, Llano, for consumptives, has materially increased its accommodations for patients, and on August 25 it opened its new and enlarged quarters.——A sanatorium to cost $250,000 is to be erected in Shannon.

City Chemist Needed.—At a meeting of the Dallas Medical and Surgical Society, held September 8, resolutions were unanimously adopted that the society realizes the importance of the movement now being carried on by the city health officer to inspect foodstuffs offered for sale in Dallas, and urging the establishment of a department. to be in charge of a competent chemist. whose duty it shall be to examine such foods as may be brought before him, analyzing and reporting on them.

Personal.—Dr. Joseph Gilbert, Austin, physician of Travis County, has resigned to become chief medical officer at the Agricultural and Mechanical College, and assumed his duties at that institution September 8.——Dr. Herbert F. Sterzing, Austin, has been appointed physician for the city of Austin and Travis County, vice Dr. Joseph Gilbert, resigned. Later on the county commissioners appointed Dr. George S. Beaty, Sprinkle, as county physician.——Drs. Margaret Gilbert and Horace Holiday have been elected assistant physicians to the State Lunatic Asylum, Austin, vice Dr. James H. Eastland and Louis H. Kirk, resigned.

VIRGINIA.

Cocain Sellers Fined.—Richard Hunycutt and John Boush, colored. were each fined $100 and costs in the Norfolk police court September 10 on the charge of selling cocain.

Personal.—Dr. J. N. Cranshaw, Fredericksburg. has been appointed physician in the University Hospital, Charlottesville. ——Dr. Herbert O. Forbes, Jetersville, broke his arm while playing baseball September 15.

Hospital Fire.—A fire early in the morning of September 10 in Newport News General Hospital for a time threatened peril to the inmates. A panic was averted by the fire chief of Newport News, who had been operated on for hernia in the hospital a few days before, and who directed the work of the firemen.

Health Department Ordinance.—The ordinance revision commission of Norfolk will submit to the council at its meeting in October the following recommendations: That there shall be a health commissioner, who shall act as the head of the health department, at a salary of $2.500 per annum; that he shall have one assistant, who shall be head of the sanitary force of the city, and act as office man, at a salary of $1.800 per annum. and that he shall have two assistants who shall act as physicians to the city poor, at a salary of about $1,200 each per annum.

WASHINGTON.

Typhoid Fever at Camp Tacoma.—Typhoid fever is said to have been epidemic at Camp Tacoma. Up to September 4. 33 patients had been sent to the Vancouver barracks for treatment, and the same number had been treated in the field hospital.

Typhoid Fever.—An unusual number of cases of typhoid fever are in the hospitals of Spokane at present, it is said. St. Luke's Hospital has 16 cases; the Sacred Heart Hospital about 20; Washington Hospital, 10. and the Deaconess Hospital. 8. The health officer states that almost all the patients contracted the disease out of town.

Tuberculosis Society Organized.—At the meeting of the Washington State Medical Association the Washington Association for the Relief and Prevention of Tuberculosis was organized, with the following officers: President, Dr. Clarence A. Smith. Seattle; vice-presidents, Drs. Frank H. Luce, Davenport; Wilson Johnston, Colfax, and Elmer E. Heg, Seattle, and secretary. William R. M. Kellogg, Seattle.

Health of King County.—According to the report of the county health officer, Dr. Bartholomew E. Hoye, Auburn, from Dec. 1, 1904, to Sept. 1. 1906, there have been 100 cases of scarlet fever, 121 of diphtheria, 82 of typhoid fever and 22 of tuberculosis in King County outside of Seattle. Three small epidemics of scarlet fever have been reported, one from North Bend, one from Woodville and one from South Park.

WISCONSIN.

Maternity Moves.—The Milwaukee Maternity Hospital and Dispensary Association has moved into its new quarters at 424 Vliet Street.

To Build Sanatorium.—The state board of control has appointed J. E. Hoyt superintendent of construction of the Wisconsin Tuberculosis Sanatorium, to be erected at Wales, Waukesha County.

Hospital for Janesville.—The physicians of Janesville met at the office of Dr. Samuel B. Buckmaster, September 1, to consider the proposition of establishing a hospital to be operated in Janesville under the management of the Sisters of Mercy.

College Opens.—The opening exercises of the Milwaukee Medical College were held September 17. Addresses were made by the president. Dr. William H. Earles, and others. who made references to the university negotiations, the establishment of which are now pending.

Epidemic Diseases.—Bayfield is said to be experiencing an epidemic of typhoid fever. About 15 cases are reported and the disease is thought to have been caused by bad water.——In Lodi 5 cases of typhoid fever have been reported.——On account of 2 cases of diphtheria at Wauwatosa. three grades of the public schools have been closed.——Smallpox is reported to have broken out in Cambria, where 10 cases have appeared. The church conference which was to have been held in Cambria has been transferred to Portage on this account.——Smallpox is reported at McDill, where 2 cases have appeared.

Personal.—Dr. James S. O'Brien, Milwaukee, has been elected president of the board of directors of St. Mary's Hospital; Dr. George D. Ladd, vice-president. and Dr. George W. Fox. secretary.——Dr. Joseph P. McMahon. Union Grove, has sailed for Europe.——Dr. Guy C. Bowe, Fond du Lac, has discontinued practice in the state and will remove to Ashland, Va.——Dr. Thomas W. Nuzom and wife, Brodhead, have returned from Europe and will locate in Janesville.——Dr. G. Fred Colter, Marinette, has been reappointed a member of the advisory board of the State Tuberculosis Sanatorium.

GENERAL.

American Electro-Therapeutic Association.—The sixteenth annual meeting of this association was held in Philadelphia, September 18-20. under the presidency of Dr. Charles K. Mills, Philadelphia. The name of the association was changed to the Physico-Electro-Therapeutic Association. and the following officers were elected: Dr. Morris W. Brinkmann, New York City, president; Dr. J D. Gibson, New York City, and Mihran K. Kassabian, Philadelphia, vice-presidents; Dr. Albert C. Geyser, New York City, secretary, and Dr. Richard J. Nunn. Savannah, Ga., treasurer (re-elected), and Drs. William B. Snow. New York City; Fred H. Morse. Boston. and Francis B. Bishop, Washington, D. C., executive council. The association will meet in Jamestown, Va., in 1907.

Hospital Superintendents Meet.—The Association of Hospital Superintendents held its eighth annual meeting in Buffalo, September 18-21. After the meeting had been called to order by the president, George T. Ludlam, New York City. Mayor J. N. Adam welcomed the association to Buffalo. and Dr. George H. M. Rowe of the Boston City Hospital responded. In his annual address the president declared that the hospital as an institution had not kept pace with the development of the country. and that in an organization where all the hospitals in the country are bound together by common ties. would be the greatest hope in expansion. He suggested that the name of the association be changed from the "Association of Hospital Superintendents" to "The Hospital Association." in order to allow the admission to membership of managers. trustees and representatives of medical boards, in addition to superintendents. The following officers were elected: President. Dr. Renwick R. Ross. Buffalo General Hospital: vice-presidents, Superintendent Curtis, St. Luke's Hospital, Chicago; Superintendent W. W. Kenny, Victoria General Hospital, Halifax, N. S., and Dr. Alice M. Seabrook, Woman's Hospital, Philadelphia; secretary, Superintendent George J. Bailey, Jefferson Medical College, Philadelphia, and treasurer, Superintendent Asa Bacon, Presbyterian Hospital, Chicago. The next meeting of the association will be held in Chicago, Sept. 19-21, 1907.

CANADA.

School Medical Inspection in Montreal.—School inspection in Montreal has become an actual fact. Twenty-one inspectors have recently been appointed from among the medical fraternity of that city.

The consumption of Liquors and Tobacco in Canada.—During the year ending June 30, 1906, the *per capita* consumption of alcoholic liquors and tobacco in Canada was as follows: Gallons, spirits, 0.927; beer, 15.660; wine, 0.698; tobacco, pounds, 2.991. There was a decrease in the consumption of spirits and an increase in that of beer, wine and tobacco.

Medical Schools Open.—The inaugural address in connection with the opening of the Medical Faculty of McGill University was delivered September 18 by Dr. R. F. Ruttan, professor of chemistry in McGill. This is the seventy-fifth session.——The Manitoba Medical College reopened the first week in October.——The Medical Faculty of Toronto University commenced work for the session October 1.

Personal.—Sir William Broadbent, who has been in Canada for the last six weeks, has returned from a trip across the continent, and has sailed for home.——Dr. Gerin Lajole, formerly a practitioner in Montreal, but for the past six years in France, has been appointed a surgeon-major in the French army.——Dr. J. L. Robinson, Montreal, has been appointed medical superintendent of the Vancouver General Hospital.

Hospital News.—During the three months ending June 30, 1906, 881 patients were treated in the Montreal General Hospital. There were 59 deaths. In the out-door departments there were 10,893 consultations. Dr. F. J. Shepherd was elected to fill the vacancy on the committee rendered vacant through the death of Dr. Craik.——The annual report of the Toronto General Hospital for 1905 has just been issued. In it is incorporated a report of 110 cases of typhoid fever treated in the institution from Jan. 1 to Dec. 31, 1905. Seventy-four per cent. showed rose spots; the spleen was enlarged in 54 per cent. The Widal reaction was positive in 76 per cent. before the seventh day of admission. The diazo reaction was obtained in 52 per cent. of the series. Nine patients died, a percentage of 8.2. Relapses occurred in 14 cases. Lobar pneumonia occurred in 7 cases; bronchopneumonia in 1 case; pleurisy with effusion in 2; bronchitis in 12; perforation of the bowel in 2 (both treated with purgatives); phlebitis in 11; convulsions in 2.

FOREIGN.

Institute for Testing of New Drugs.—The "George Speyer House," an institution erected and endowed by the widow of a Frankfurt capitalist, was dedicated with much ceremony September 3 at Frankfurt a. M. The institution is to be under the supervision of Professor Ehrlich, and is designed for the investigation and testing of new drugs.

The Schaudinn Medal.—An endowment has been raised for the purpose of presenting a medal every two years for the most prominent works in the domain of microbiology. The medal will be known as the Fritz Schaudinn medal, and will be awarded on the anniversary of Schaudinn's death, at the Institute for Ship and Tropical Diseases, at Hamburg, the scene of Schaudinn's last labors. The medal will be awarded irrespective of nationality.

Diploma of Public Health in Australia.—The faculty of medicine of the University of Sidney, according to the *Lancet*, has recommended the adoption of by-laws and regulations for a diploma of public health which will testify to the candidate's proficiency in all branches of study, scientific and practical, necessary for the proper performance of the duties of health officer. The examination will be in two parts: (1) The general principles of sanitary science; and (2) state medicine and the applications of pathology and sanitary science to public health.

Hallucinations of Chloroform.—A Paris physician who had performed an operation under chloroform on a housemaid was accused by the latter of taking improper liberties with her mistress, as she saw while coming out from under the influence of the chloroform. The medicolegal experts, Professors Brouardel and Debove, testified that chloroform was liable to induce hallucinations, not only during the anesthesia, but even after partial awakening. The French court accepted this testimony and ruled out the housemaid's evidence in a recent divorce case.

New Sanitary Service for India.—It is reported that in view of the continuance of the epidemics of plague, cholera and smallpox in India and the heavy perennial mortality from malaria, that the government has decided to create an entirely new service whose duty it will be to safeguard public health. According to the *British Medical Journal*, Lord Kitchener is greatly concerned by the high percentage of preventable disease cases in the army and has instituted a system of lectures on sanitation, to be delivered during the cold season in every military station in India by specially selected officers of the Royal Army Medical Corps.

A "Patent Medicine" Before the German Courts.—The proprietor of a cure for baldness and the business manager of a local paper at Hanover, Germany, were recently sued for publishing extravagant claims in regard to the virtues of the remedy known as *eau de merveille*. The *Allg. med. Ct.-Ztg.* quotes an account of the proceedings to the effect that the chemical experts testified that the 50 cent bottle contained merely alcohol and water with some aromatic oils, the cost of which could be only a few pennies. The proprietor, while vaunting the efficacy of the remedy, was nonplussed by the inquiry why he had not used it on his own bald head. The two defendants were fined $5 each.

Change Desirable in Meeting Places.—There is considerable discussion just now in Germany as to the place where the annual congress of internal medicine shall be held. An effort is being made to have the members vote to have the congresses held invariably at Wiesbaden, instead of, as at present, at Wiesbaden only every second year, and the intervening years at different places. Much ink is being used to proclaim the importance and benefits of holding the congresses at various points so as to give all the physicians occasionally a chance to have the congress in their immediate neighborhood, and save them the time and money of a long journey to the meeting place, besides the other advantages of change.

Epileptic Colony in Scotland.—The Colony of Mercy for Epileptics, in connection with Quarrier's Homes at Bridge of Weir is now ready for occupancy. One house has been opened and is occupied by 12 colonists, all young men. It is proposed to fill up the houses gradually as suitable applicants are found. Only thoroughly sane young men who are capable of taking part in healthy outdoor garden and farm work will be admitted to the colony. Each colonist is expected to provide himself with clothes, and to pay a minimum sum of about $2.50 a week toward his expenses. It is not expected that the colony will be self-supporting, but as funds become available it is intended to erect buildings for women and children.

The Wanderings of a Leper in Europe.—A recent simila occurrence in the United States lends interest to the statemen in an Austrian exchange that a man of 48, in the early stage of leprosy, recently arrived at the Austrian frontier on his way to his home in Roumania. Passage through Austria was not allowed, and he was sent back, with a car to himself, the doors locked and sealed. The Bavarian railroad returned the man to the place where he had taken the train, Frankfurt a. M., where he was transferred to the city hospital and isolated. It is proposed to send him back to London, where the disease was first diagnosed and where he started on his journey. Our exchange queries in conclusion: "What country will finally have to keep him?"

Health Board Warns Against a Fake.—The local board of health at Carlsruhe, Germany, has recently published a notice in regard to an electric battery advertised by "Professor Keith-Harvey of London" in the local papers as a sure cure for deafness. It describes the absurdity of expecting that deafness can be cured by "a mild galvanic current conducted to the muscles of the ear," even if the advertised battery is all that it claims to be. It also calls attention to the printed circular letter sent out by the advertisers in reply to applicants, although they advertise "a careful individual diagnosis made from the symptoms described in each case." The notice closes by warning explicitly against the "swindle gotten up solely for the purpose of obtaining money from the credulous."

Much Radium in Vienna.—Some time ago the Vienna Academy of Sciences received by official grant 10,000 kilograms of the uranium ore from which radium is produced. It was sent to the academy from the government mines at Joachimsthal for purposes of scientific research. The radium derived from this raw material has been accumulating until now the academy has on hand pure radium to an amount worth fully a quarter of a million dollars, according to the present market value of radium. It is not to be sold, but will be distributed among scientific bodies for purposes of research. The Austrian authorities have decided to erect a special laboratory at

Joachimsthal for the production of radium salts on the spot. As recently already mentioned by our Vienna correspondent, a health resort is to be opened there to take advantage of the radium emanations in the waters.

Behring's Tulase.—The first report on the treatment of patients with tulase has just been published in the organ of the International Antituberculosis Association, *Tuberculosis.* The remedy is, for the present, given only to a few clinics which have sent one of their assistant physicians to Behring's institute at Marburg to take a three months' course in preparatory training in the use of the remedy, and have agreed to keep records according to a prescribed system. The experiences to date have demonstrated that the tulase can be administered subcutaneously, intravenously or by the mouth. It is given to infants in milk. It is not claimed to be a remedy that will cure already existent tuberculous processes, but it is said that administered to the young, it will prevent the development of tuberculosis, and will act on an existent tuberculous process in such a way that the natural tendency of the lesion to heal will not be interfered with by renewed tuberculous infection. The tulase is given in minute doses, and for diagnostic purposes can be substituted for tuberculin. Behring's first announcement in regard to his tulase was mentioned in these columns on page 869.

How They Humbug the Dear People in Italy.—A correspondent, Dr. F. E. Sondern, New York, writes from Geneva, Switzerland: "While in a small Italian town some days ago, the enclosed circular was being distributed." The circular is in Italian and reads:

> A free visit will be made by one of the 20 professors of the American Medical Association residing in Milan, on August 25, at Verbano Restaurant, from 8 till 2 p. m., at Stresa. These professors cure by the homeopathic method, acknowledged to-day to be the best for the cure of all diseases, especially the most obstinate, chronic cases. The remedies used for the cure of these acute and chronic diseases are imported directly from the United States of America and from Germany, and are sent out by our house in Milan, in conformity with the law of the realm. With this new scientific system of treatment, thousands of cures have already been obtained in Italy in acute and chronic diseases, many of them declared incurable by renowned professors in Italy, and with little expense, as we can prove by the thousands of letters from grateful patients, which we will take pleasure in showing to whoever will apply at this office.

Then follow names and testimonials of some among the alleged 4,320 patients that have been cured. The circular is signed, "American Medical Association, Milan-Palazza, Genova 3, Milan."

Relief of Australian Dependent Children.—The report of the State Children Relief Board of New South Wales for the year ending April 5, 1906, shows 7,036 children dependent on the state, being about 0.5 per cent. of the population. Of these a little over one-half are placed in homes apart from their mothers, with an average of three children to two guardians. This secures, as far as possible, the individual attention of the foster mother. The maximum number of children in a home is fixed at three, except under peculiar circumstances. The care of the children is supervised by visitors, both salaried and voluntary, in such a way that each child receives a visit on the average twice a year. Cottage homes having the average capacity of twenty are provided for invalid children who are not sick enough to be placed in a hospital, but need special nursing and attention. These homes are under the charge of experienced women, who act as nurses under medical supervision. Deserted wives and widows are allowed to board their own children under supervision. Statistics show that while the aggregate of the women is now decreasing each year, the proportion of deserted wives to widows is steadily increasing. Older children are apprenticed, the board collecting their wages and depositing them to a fund out of which the children are paid their share partly on completion of the indentures and the balance when the child has reached the age of 21 years. The board considered it necessary to oppose the proposition of a milk wagon drivers' association to deliver milk but once a day on holidays, on account of possible injury to the health of children, and was successful in defeating the proposed action.

LONDON LETTER.

(From Our Regular Correspondent.)

London, Sept. 8, 1906.

The Milk Supply.

The problem of a pure milk supply greatly exercises those interested in public health. Under existing conditions there is undoubtedly gross neglect of sanitary precautions and cleanliness. The much advertised precautions such as washing hands and udders are seldom carried out, and the milk is polluted with cow dung and other dirt. "If canned meat has killed its thousands, milk has killed its tens of thousands," declares a health officer. It is computed that there are over 4,000,000 milch cows in the United Kingdom, and that the average yield of milk per cow per annum is 420 gallons. Thus the total yield is about 1,700,000,000 gallons. As milk is sold for fourpence a quart, the total cost per annum amounts to about $570,000,000. In only a minority of cases are the conditions of this enormous industry above suspicion. The question of transit also presents difficulties. Almost all the milk consumed in London comes from such distances that it is from 12 to 24 hours old before it is delivered. The milk taken from cows at 4 a. m. arrives only in time for the afternoon delivery, when only half of it is required. The remainder is kept by the dairyman to be mixed with the afternoon supply for delivery next morning. Thus the morning supply is a mixture of milk more than 12 hours old with milk more than 24 hours old. But something still worse may happen. The fact that a cow gives a richer milk in the smaller afternoon milking than in the larger morning milking leads unscrupulous dealers to mix separated milk with the richer article. This can be seen going on almost any day at the large railway stations. When the supply is larger than is required the surplus is allowed to remain at the station, to be manipulated day by day with further supplies until it can be advantageously disposed of—perhaps three or four days after milking. Acting on the recommendation of the public health committee, the progressive London County Council has determined to seek in the next session of parliament several important powers for dealing with matters of sanitation and public health. The most important relate to the supervision and regulation of the milk supply of London. Power will be asked to enable the council to prohibit the supply of milk from a dairy if the health officer is of the opinion that infectious disease is caused or likely to be caused by the consumption of such milk. To enable necessary supervision to be carried out the council seeks power to require dairymen to supply lists of their customers and the sources from which their milk supply is obtained, and power to impose penalties for selling milk from tuberculous udders. It is also proposed to compel dairymen to report cases or suspected cases of tuberculosis of the udder and to isolate cows suffering from this disease. Power is sought to enable the council to take samples of milk arriving at any railway station in London and elsewhere and to deal with milk which is found unfit for consumption. With regard to milk for infants, the council intends to seek authority to enable the various local metropolitan borough councils to provide and to sell milk for the food of infants. This has been done with good results as to infant mortality by some local councils, but the expenditure is illegal.

Medical Education in London.

The high standard demanded by the University of London for the degree of doctor of medicine causes only a small minority of the London students to seek to obtain it. The majority content themselves with obtaining a license from the College of Physicians and Surgeons. This is sufficient for the purpose of practicing, but the licensee is not strictly entitled to the title of doctor, though it is freely given to him by the lower and lower middle classes. Among the upper and educated classes he is termed "Mr." and is under some disadvantage as compared with those who have obtained the degree of doctor of medicine from a university, and who are correctly styled "doctor." This degree is much more easily obtained in the provincial, Scotch and Irish universities than in London. Consequently there is a tendency of students to flock to the latter to the neglect of the London schools, and yet the London hospitals provide opportunities for the study of clinical medicine which are unequaled in the British Isles. The subject is discussed by the *Lancet* in its annual address to students. Last year the number of students at the London medical schools was rapidly dwindling. "By so much," says the *Lancet*, "as the work done in the wards and out-patient departments of the London hospitals is not utilized for educational purposes is our country placed at a disadvantage compared to others—we are wasting our opportunities."

The Study of French and German for Medical Students.

Professor Osler has issued the following memorandum to the Oxford undergraduates regarding the importance of the study of French and German: "During your undergraduate days you should become familiar with the French and German languages. To do this one of the best ways is to read small French and German text-books, of which (with the advice of colleagues) I enclose a list. Half an hour a day will soon give you the necessary facility in translation. Later in your course get into the habit of reading, in the Radcliffe Library, a French and a German periodical. You will in this way become familiar with foreign literature, which has ever been deemed a necessary equipment of a cultivated physician." The following list of French and German books is recommended to undergraduates taking science courses preliminary to medicine, and to students of anatomy and physiology. French—Aubert: "Phénomènes de la Vie." Ditte: "Premières Notions de la Chimie." Joubert: "Traité d'Electricité." Meric: "Dictionnaire des Termes de Médecine Franç.-Anglais." German—Born: "Compendium der Anatomie des Menschen." Reynolds: "Leitfaden zur Einführung in die Experimental-Chemie." Fiedler and Sandbach: "A First German Course for Science Students." Osbonne: "German Grammar for Science Students." Schenk und Gurber: "Leitfaden der Physiologie des Menschen." Lang and Abrahams: "German-English Dictionary of Terms Used in Medicine and the Allied Sciences."

Central Emergency Fund of the British Medical Association.

The British Medical Association has for some time been engaged in combating the evils of contract practice. Many clubs take advantage of the severe competition which prevails in the profession to pay exceedingly inadequate fees to their medical officers or, in the language of the trade unions, to "sweat" them. No matter how low the remuneration, the clubs have usually been able to obtain a physician to fill a vacancy caused by dissatisfaction of the previous holder of the appointment. The British Medical Association, however, has put a check on this unlimited competition by arranging concerted action of the profession. The local branches determine whether the conditions of an appointment are satisfactory and if not, endeavor to prevent any physician from taking it. In the advertisement pages of the *British Medical Journal* warning notices are inserted asking physicians not to apply for any appointment without first communicating with an officer of the association, whose name is supplied. At the places mentioned some dispute is in progress, usually in connection with some form of medical contract work. Any physician who thinks of applying for the vacancy is put in possession of the facts. The current number of the *British Medical Journal* contains as many as 19 such notices. The association has now gone a step farther. Last year the central council passed a resolution providing that a central emergency fund for dealing with disputes in case of contract practice and otherwise, under the management of the medico-political committee, be created by voluntary subscription. The following scheme of the fund has now been prepared: 1. The fund is created by voluntary subscription to assist members of the profession in various parts of the country in maintaining the interests of the profession against organized bodies of the community. 2. All members of the profession are invited to contribute. Any contribution may be marked for use in specified disputes, or for application to special methods of carrying on the objects of the fund, and when not so marked shall be deemed to be given for disposal at the discretion of the medico-political committee. 3. The fund may be applied as follows: (a) By a grant or grants to any individual practitioner to assist him in maintaining any position in which the association shall have decided to support him or to compensate him for losses which he shall have incurred through taking action approved by the association. (b) By a grant or grants to any division or branch of the British Medical Association, for its assistance in defraying expenses incident to the conduct of local disputes falling within the scope of the objects of the fund. (c) By expenditure under direct supervision of the medico-political committee for any action which the committee may deem necessary or advisable for the promotion of the general objects of the fund.

LONDON, Sept. 15, 1906.

First Report of the Expedition to the Amazon of the Liverpool School of Tropical Medicine.

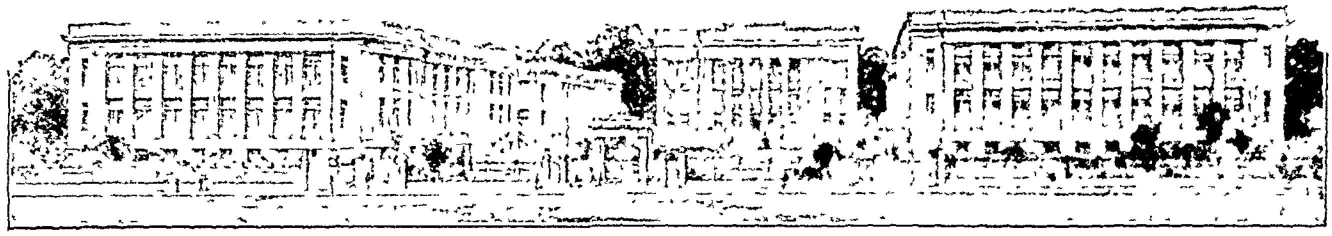
This expedition left its headquarters at Manaos, Brazil, and proceeded up the River Amazon for the purpose of invesigating the distribution of disease and of yellow fever in particular. Iquitos in Peru was reached on Dec. 31, 1905. A stay of three months was made there and a report was presented to the Peruvian government. Iquitos lies along a high bank overlooking the river Maranon and behind it are swamps. The roads are in a wretched state—undrained, full of ruts and holes—and in wet weather become almost impassable. The town, especially along the river bank and near the swamps, is noted for the number of mosquitoes. Houses near the river are never free from them and unless wire screens are used the situation becomes intolerable after dusk. Neither water reservoirs nor privies are protected from mosquitoes; stegomyia and culex were frequently found breeding in both. As is usual, stegomyia was found to breed freely in the various discarded pots and pans, bottles and barrels wh accumulate in tropical establishments. The sanitary cond tion of the town is very bad. Drains for the most part a mere trenches cut in the sandy soil. There is no public wate supply; water is obtained from springs or from cisterns sunk in the ground in which rain water is stored. There is no proper system of sewage disposal. The poorer classes defecate indiscriminately in every part of the town, and fecal contamination of drinking water is common. *B. coli communis* and eggs of *Ankylostoma duodenale* were frequently found in the water. There is no system of garbage disposal; household refuse is deposited almost anywhere. Notwithstanding its insanitary condition, Iquitos is not exceptionally unhealthy. The prevailing diseases from January to March are whooping-cough, measles, bronchitis and infantile diarrhea among children; gastritis, gastroenteritis, bronchitis and malaria among adults. Other diseases seen were leprosy, amebic dysentery and tuberculosis. The expedition had hoped to see "*vomito negro*," which is locally considered to be distinct from yellow fever, but no cases of either occurred. From the information given by the local physicians they appeared to be the same disease. To ascertain the prevalence of malaria in the blood of the general population, 764 persons were examined. In 98 the malignant tertian parasite was found. The majority of those infected were Indians and men employed in launches along the rivers. Of 97 children between the ages of 4 and 14, only 2 were infected. The hemoglobin showed a low average in Indians and the poorer classes, varying between 45 and 72 per cent., and in the better classes between 72 and 80 per cent. The explanation of this marked anemia is believed to be ankylostomiasis. Practically all the native children are infested with the parasite. An accompanying infection with ascaris lumbricoides or various teniæ was frequently observed. Among the domestic animals at Iquitos the following diseases were observed: In cattle piroplasmosis, malignant edema and perhaps quarter evil; in swine trichinosis; in poultry chicken cholera and fowl diphtheria; and in rats *Trypanosoma lewisi*.

Glycerinated Calf Lymph.

A preliminary report has been made to the local government board by Drs. F. R. Blaxall and H. S. Fremlin on experiments undertaken to determine whether or not the active agent of vaccine lymph could withstand, without loss of potency, temperatures below freezing point. Afterward the doctors were directed to ascertain whether sustained subjection of glycerinated calf lymph to a temperature of 5 degrees (C.) below freezing point could be used to maintain a reserve of lymph without loss of activity. General experience and numerous experiments have shown that the agents most productive of weakness and failure in glycerinated lymph are age and heat. Thus crude lymph loses its potency if subjected for five minutes to a higher temperature than 57.5 C. Glycerinated lymph becomes inert if kept at 37 C. for more than thirty-six hours. It was anticipated that if the everyday deleterious influence of heat on lymph could be prevented the loss of activity which is associated with age could be diminished and a method of storage attained. Experiments were commenced in January, 1900. The lymph was exposed to various low temperatures, including that of liquid air (—180 C.). The following conclusions were reached: 1. Glycerinated calf lymph can survive a temperature of 180 C. below freezing point for a considerable time without loss of potency. 2. It can be retained in a cold store at —5 C. for a year without diminution of potency, whereas stored for the same time at 10 C. it loses activity to a considerable extent. 3. Sustained subjection to cold appears not to be injurious.

The Overlying of Infants.

The overlying of infants is the cause of more than 1,600 deaths annually. A meeting has taken place between six members of the National Society for the Prevention of Cruelty to Children, three representatives of the Coroner's Society and three members of the British Medical Association. The subject was thoroughly discussed, and it was decided to take some step toward amending the act for the "Prevention of Cruelty to Children." The form of the amending bill and the steps to be taken to insure its acceptance by the legislature were left for settlement at a later date. It seems probable, however, from what passed at the meeting, that the death from suffocation of a child under the age of 3 years as a consequence of its sleeping in the bed of its parents or other adults, as also the death of a child under the age of 10 years from burning or scalding from being allowed access to an unprotected and lighted open fireplace, *ipso facto*, will be made evidence of neglect in the sense in which the term i used in the act mentioned.



THE HARVARD DEDICATION.

New Buildings of Harvard Medical School Dedicated September 25-26.

The ceremonies attending the formal opening of the new medical laboratories of Harvard University, which were described in THE JOURNAL, July 7, page 50, have more than a local interest. They mark the completion of an important step in the development of a scheme in medical education and instruction not hitherto attempted in this country. The Harvard faculty believes that a medical school should be something more than a place of instruction. It believes that the student in medicine should be so trained and drilled in research methods that it becomes the basis of all his work. This view is strongly reflected in the magnificent buildings just dedicated. In these four great laboratories every facility has been provided for instruction, training and drilling of each student individually, both as to the essentials of past research, as well as in the methods by which those fundamentals were acquired. While the laboratory methods are emphasized strongly in this celebration, they are but the nuclei about which hospitals are to be grouped at no very distant date. Boston offers annually a hospital clinic of over 15,000 ward patients and more than 130,000 ambulatory patients. In the care of this great number of afflicted persons the Harvard medical faculty has almost unrestricted facilities for studying and demonstrating disease in its various forms.

A Medical University.

In order that the greatest amount of advantage possible to suffering humanity, as well as to medical science and instruction may result from a closer union of the laboratory and the hospital clinic, these new laboratories are to be an integral part of a great hospital teaching medical center—a medical university. The hospital of the Good Samaritan is already established on the site, and the remaining fifteen acres are to be used for the Harvard Dental School, an infant's hospital, children's hospital and a large general hospital, all to be under the jurisdiction of the corporation of Harvard University. The whole plant is to form a part of a general architectural scheme, of which the Fenway is the center. To meet this design the administration building and the four laboratories face a quadrangle 215 feet wide and 480 feet long, which is the continuation of a proposed boulevard extending to the Fenway.

Plan and Construction of Buildings.

All these buildings are of white marble, and are designed in a simple, classic style, an adaptation from the Greek. The administration building, facing the open court, is raised on a high terrace, which gives a setting pleasing and majestic. The approach is by means of a broad flight of steps from the terrace to the front portico of the building, from which rise six ionic marble columns, each over fifty feet high. The interior of this building, on the ground floor, is treated with marble floors and wainscoting and columns, etc., in keeping with the general design of the exterior. The right wing of this floor is arranged for the administrative offices of the school, the faculty room, committee rooms, and others. The left wing contains rooms for students and alumni, a reading room, and a smoking room. Over the students' room is an amphitheater, with entrance so arranged that the students enter from the second floor to the upper tier of seats, while the lecturer with his lecture material, is admitted from an intermediate floor below. This lower floor has a connected preparation room, to which the elevator runs from the receiving room and museum, so that specimens may be transported directly on movable tables. The seats in this amphitheater, as in all the other class rooms, are especially designed with movable seats and writing tablets. Every facility is provided for illustrating by means of lantern projections. The remaining portion of the second floor in this building is divided into class rooms

The Warren Museum.

The Warren Museum occupies the entire upper portion of the building, and has a total floor area of over 22,000 square feet. The museum is equipped with dust-proof cases and has every modern museum appliance. The curator's room and receiving room are equipped for laboratory work and have elevator connections with the receiving room in the basement. In the basement are located x-ray rooms, students' lockers, rooms for instruction in bandaging, and a receiving room for museum specimens. The locker room is extended on both sides into a wide corridor which runs underneath the terrace facing each laboratory, thus forming a covered passage between the four laboratories and the administration building.

The four laboratories are so arranged that those most closely affiliated with each other are in the same building. These buildings are located as follows: On entering the court from Longwood Avenue the first building on the right is the hygiene and pharmacology building; the other building on the right is the physiology and chemistry laboratory. On the opposite side of the court the building nearest Longwood Avenue is for pathology and bacteriology, while the one for anatomy and histology is next to the administration building. In the rear of the pathologic and bacteriologic building and separated from the main laboratory, is a building for animals, with accommodations for all kinds and sizes, from cows and sheep to birds and guinea-pigs. The power house is situated some distance in the rear of the hygiene-physiology pair of buildings and at the best advantage for furnishing heat, light, electricity, refrigeration and compressed air to the several laboratory buildings, and also to the adjacent hospitals now built and to be built in the future. Provisions are made for increasing the size of this power plant so as to provide for future hospitals and other buildings, as well as the enlargement of the present laboratories.

Construction of Laboratories.

The construction of the laboratories is unique and original. They are constructed on a plan devised and amplified by Prof. William T. Porter and Prof. Charles S. Minot of the Harvard Medical School. This plan consists of an aggregation of "units," and is briefly as follows: The outside walls are built with piers 4 feet each and the windows between are 6 feet wide and extend to the ceiling to provide proper lighting, the whole making a unit of 10 feet. The outside and corridor walls and the floors are the fixed portions ot the buildings, the corridor walls being hollow to contain the heating and ventilating flues. Running through each wing is a central corridor, from which the laboratories lead. The unit room is roughly, 23 feet deep by 10 feet long, the window coming in the middle of the ten-foot exterior wall space. The partitions opposite each unit pier are composed of terra cotta, which can be easily removed or supplied, making a room 23 by 20 feet, or any multiple of 10 feet, thus providing for rooms suitable for small sections, laboratories, private research or for the professors' or instructors' personal use. As the growth of the school necessitates, each wing can be lengthened by additional piers and windows, and when extended to a distance of 216 feet may be connected together in rear, enclosing a court 112 feet long by 70 feet wide. This trebles the capacity of each laboratory without interfering with light or architectural design. The buildings are divided into stories to conform to the needs for which they are intended. In the large laboratories for general students' use the stories are high and the windows are carried to the ceiling, thus affording abundant light to all parts of the room, sufficient for microscopic work.

For smaller rooms used for individual research work intermediate or "mezzanine stories" are introduced. In the center of each building is an amphitheater occupying two stories, and in the second story of each is a library. These are accessible from both wings. Each amphitheater has a seating capacity of 265, and completed facilities for lantern projections, etc. Each laboratory building is equipped with every facility for carrying on the work of that special department, e. g., the anatomy and histology building has its separate driveway for introducing anatomic subjects, large refrigerator for storage, isolated dissecting rooms, and an elevator so located as to properly serve the dissecting and demonstrating rooms; the physiology and chemistry building its pens, cages, exercise yards, etc., for animals on the roof, while each department conducting operations on animals has its animal operating suite, equipped with most approved hospital appliances; the chemistry wing is constructed with special reference to the varied methods of research and investigation now attracting the attention of scientists; in the bacteriologic and pathologic building four large students' laboratories occupy one wing, while the south wing is divided into mezzanine stories for research work.

The rear end of one basement is devoted to photography. In the hygiene and pharmacology building a completed museum of food products, models of appliances relating to the public health, etc., are given a special section. Comparative pathology forms a separate and distinct department in this building.

The acoustic properties and seating arrangements of the various amphitheaters and laboratories have been carefully supervised by Professor Sabine of Harvard University.

Dedicatory Exercises.

The formal dedicatory exercises were held at the new buildings on Longwood Avenue, Boston, September 25 at 2 p. m. Grouped about President Eliot on the portico and terrace of the administration building were gathered an assemblage of eminent and distinguished scientists and notable persons, while the large gathering ot alumni and lay persons on the lawn in front testified to the intense interest felt in this great event. Besides the president and fellows and overseers of Harvard University and the medical faculty, some of those occupying seats on the platform were Governor Guild, Russian Ambassador Rosen, Mr. J. Pierpont Morgan, Mr. Charles H. Tweed, Most Rev. W. H. O'Connell, D.D., Boston; Prof. W. H. Welch, Johns Hopkins University; Prof. William Keen, Philadelphia; Prof. A. Jacobi, New York; Sir Thomas Barlow, London; Dr. William Ewart, London; Prof. Franz Keibel, Freiburg; Prof. John Glaister, Glasgow; Professor Durfour, Lausanne; Prof. C. S. Sherrington, Liverpool; Prof. Ramos Mexico; Prof. R. A. Reeve, Toronto; Sir William Hingston, Montreal; Prof. R. F. Leith, Birmingham, England; Prof. G. S. Woodhead, Cambridge, England; Prof. Harvey Littlejohn, Edinburgh; Prof. S. C. Minot, representing Royal Institute, Florence, Italy, and representatives of every university and medical school in America, as well as from many American and foreign scientific bodies.

Program.

The exercises consisted of prayer, George Angier Gordon, D.D. Address, "The Enlarged Foundation," J. Collins Warren, (Hon.) Moseley Professor of Surgery. "The Buildings," Charles A. Coolidge, representing the architects. "Acceptance of the Buildings," the President of the University. "The Faculty of Medicine," the Dean. "The Laboratories," Thomas Dwight, Parkman Professor of Anatomy. "The Clinics.' Frederick C. Shattuck, Jackson Professor Clinical Medicine. Dedication of the Buildings, the President of the University. Benediction. Demonstration of the buildings.

The Enlarged Foundation.

Dr. John Collins Warren spoke as follows:

It is my duty and privilege to announce to you on this occasion the completion of the great undertaking in which the faculty of medicine has been engaged during the past five years.

The first great step toward the foundation of a medical university has been accomplished. The laboratories for teaching and research are about to be opened on a scale far beyond what has been attempted before, and this great machine, with all its vast resources, is to be made an agent not only for the diffusion of learning, but for substantial aid and comfort to the suffering in the numerous hospitals by which it is soon to be surrounded.

But these noble buildings speak not only for a new era in medical teaching and medical research, but also for the interest which has been aroused in its behalf by men and women of public spirit.

How could a more appropriate and enduring monument to illustrious dead be raised than such as these?

This group of three buildings, with classic outline, a fitting memorial to a noble Junius, one whom we are proud to remember as a former citizen of Boston, is to-day dedicated to science by the princely liberality of a son—Filius patre dignus—whose benefactions are a household word wherever science and the fine arts are held in high esteem.

Nearby stands a memorial to one of the pioneers who have opened a pathway for the commercial world to the treasures of our great west, a monument made possible by a lady bountiful, whose devotion to the memory of her husband has been illustrated in many a worthy cause.

But it should not be forgotten that one building is the gift of a citizen of Boston, and is to bear an honored Boston name, a name which stands for all that that implies; and we shall ever gratefully recall the innumerable gifts of the grand army of Bostonians who are, and always have been, ready with generous aid.

Last, but not least, we must remember to-day the good deed of one who studied with intelligent care this great educational problem and by generous endowment made it a living reality.

To you benefactors, all I stand here to-day, in behalf of my colleagues, to say that from the bottom of our hearts we thank you, and that we appreciate what you have done for us, and we would pray for good will and sympathy from you in our work, for does not the Scripture tell us that "where thy treasure is there will thy heart be also"?

Dedication by President Eliot.

President Eliot's dedication of the buildings was as follows:

I DEVOTE THESE BUILDINGS AND THEIR SUCCESSORS IN COMING TIME TO THE TEACHING OF THE MEDICAL AND SURGICAL ARTS, WHICH COMBAT DISEASE AND DEATH, ALLEVIATE INJURIES, AND DEFEND AND ASSURE PRIVATE AND PUBLIC HEALTH, AND TO THE PURSUIT OF THE BIOLOGIC AND MEDICAL SCIENCES ON WHICH DEPENDS ALL PROGRESS IN THE MEDICAL AND SURGICAL ARTS AND IN PREVENTIVE MEDICINE. I SOLEMNLY DEDICATE THEM TO THE SERVICE OF INDIVIDUAL MEN, AND OF HUMAN SOCIETY, AND INVOKE ON THEM THE FAVOR OF MEN AND THE BLESSING OF GOD.

In accepting the buildings President Eliot said that the buildings and the permanent funds accompanying them was the largest single addition to the university since 1650. He further said:

The president and fellows well understand to whom they are indebted for this great gift. It is due in the first place to the constructive imagination and indomitable zeal of a few of the university's teachers of medicine; secondly, to the discerning and liberal acceptance by a very few rich men and women of veritable opportunity to do some lasting and pervasive good, with no admixture of evil, and with high promise of prompt beneficent results, a promise firmly based on the rapid progress of medical science within the past thirty years; thirdly, to the accumulated influence in favor of the medical profession which has been exerted in Boston and its vicinity for more than 100 years by a series of much-respected medical personages and strong medical families; and lastly, to the habit of contributing to public objects from private means, clearly manifested by the first settlers on Massachusetts Bay, and maintained and amplified by the best part of the community in every generation since, as the people rose from poverty to comfort and through a diffused well-being to occasional private affluence and public magnificence.

These superb buildings, therefore, are an expression of the intelligence and public spirit of many generations, and of the ardent hopes of the present generation for a new relief of man's estate.

The Medical Faculty.

Dean William L. Richardson spoke briefly on the growth and development of the school during its twenty-three years in the Boylston Street building. Continuing he said:

In these new buildings all that one could ask for has been pr vided, both for medical education and for scientific investigati and research. Here we have, as the president of the universit stated on another occasion, "the means for a new start for medic education and research in our country."

The facilities are so ample and the equipment so complete th the faculty has decided to make a new departure and to open a courses, including laboratory courses, to persons not candidate for the degree of doctor of medicine, but to special students i other departments of the university.

In taking possession of these new buildings the faculty feels a great responsibility, and can only express the hope that the future history of the school will show that the faculty has been faithful to the trust this day committed to it.

Laboratory Opportunities.

Prof. Thomas Dwight, in speaking for the laboratory, said in part:

One of the most striking phenomena of medical education during the past thirty years has been the gradual, unconscious, progressive self-arrangement of the various studies into two grand groups, that of the laboratory and that of the clinical departments. The former are in the main preparatory to the latter, in which the patient is the central figure. Sometimes the former are spoken of as the scientific courses; but this is a usage against which I protest. It is a reflection on the clinical courses, for all study and instruction should be scientific. On the other hand, the word "scientific" may suggest that the laboratory courses are not practical. This would be to say that they are taught under a misapprehension of the primary purpose of a medical school, which is to train students to practice medicine on their fellow-beings. But, and here is the heart of the matter, there is a sharp distinction between courses which are essential to a degree, and those which are not.

But this pronounced separation of the departments into these groups implies no opposition between them. On the contrary, I see everywhere the laboratory departments adding more and more copiously to the knowledge directly applicable to the welfare of our neighbors. If I mistake not, a new era has begun which already has given an earnest of what science can do for humanity, and which in the future will gain results beyond our hopes.

Clinical Facilities.

Dr. Frederick C. Shattuck, in speaking for the clinics, traced the course of study offered in medical schools and emphasized the fact that the laboratories represented only half of the undergraduate study. Continuing he said:

The paramount fact to which I beg to call your attention is that you see about you only a portion—I think I can safely say the subordinate portion—of the necessary means for furthering pro gressive medicine You see provision for the foundations of medical study and for such research into the nature of the disease as can be adequately carried on outside of, more or less apart from, a hospital which is as truly a laboratory as any one of this group of buildings.

The two great and many of the lesser hospitals of the city are within easy access We have good reason to hope that within a few years a new and largely endowed general hospital will be in operation at our very doors, in full coöperation with the university in the promotion of the highest aims of medicine

I do not know a medical school in the country which at present enjoys such clinical advantages as does the Harvard school. On the continent of Europe hospitals and medical schools are practically parts of the state and are supported by it. In this country the two grow up independent of one another, for reasons which, however interesting they are, we can not here consider. Their separation has been and is still a bar to progress in this country.

The keen American intelligence of those responsible for hospital management is rapidly recognizing the indisputable fact that the humanitarian and the educational duties of the hospital do not conflict—that they are indissolubly bound together if, indeed, they are not identical. The patients under the charge of a teacher of medicine, surrounded by sharp eyed and critical young men, are sure to receive more careful study than patients not so guarded That sick man is fortunate whose doctor, while caring for him, cares also for the advance knowledge in medicine in the largest sense

After the dedicatory exercises demonstrations were given in the various laboratories, and light refreshments were served from booths erected on the terraces. Music was furnished during the exercises by a specially trained alumni chorus.

In the evening the officers of the Alumni Association tendered an informal reception at the Boston Medical Library to the alumni and invited guests and delegates.

Academic Session.

This part of the celebration was held at Sanders Theater, Cambridge, September 26 at 11 a. m., and took the form of commencement exercises. The following program was carried out:

Sheriff Fairbairn called the assemblage to order. Rev. Edward C Moore offered prayer. Then followed the hymn, "Here Discovered are Foundations" by Grieg, sung by the large alumni chorus, which later was heard in the specially composed number by Professor Converse, "Laudate Dominum;" "Great is Jehovah" by Schubert-Liszt, and the Harvard hymn, sung by chorus and audience. The literary portion of the exercises consisted of addresses by President Eliot and Professor Welch, the presentation of the roll of delegates by Dr. Harold C. Ernst and the conferring of degrees.

The scene at the theater was one of the most brilliant ever witnessed there, the many colored academic costumes of the visitors and the almost universal gowning of the Harvard men giving the occasion an academic touch unique at medical school exercises. The spontaneous and tumultuous ovation given Dr. Warren and Dr. Bowditch when President Eliot announced the names of the recipients of honorary degrees, was one of the most marked tributes ever paid by a Harvard audience to a Harvard man. Later, when Professor Welch acknowledged the obligation which the medical profession owes to President Eliot, the audience broke forth in applause which lasted many minutes.

The Future of Medicine.

President Eliot said in part:

The future occupations and interests of the medical profession are to be in some respects different from those of the past, and they are to be more various The ordinary physician has for the last 100 years been almost exclusively a man devoted to the treatment of diseases already developed in human bodies or of injuries already incurred.

The progress of what we call civilization exposes human beings more and more to the ravages of disease. When savages come in contact with men called civilized, they invariably suffer from diseases new to them When a rural population crowds into cities, it falls a victim to diseases from which in the country it had been exempt When hundreds of thousands of people huddle into small areas, and create there smoke, dust and noise, they suffer not only from new diseases, but from the exacerbation of diseases, not wholly unknown to them in the rural condition

If civilized society is to endure under its new exposures and dangers it is clear that the medical profession must take up with more ardor the work of preventing approaching disease in addition to the work of treating diseases arrived The profession must recognize that health is eminently a social product, just as the psychologists have recognized that the mind of a civilized man is a social product

Thus thousands of physicians all over our southern states must for years be teaching the people how to protect themselves from yellow fever Maj Walter Reed and his colleagues proved how yellow fever is communicated and—what was equally important—how it is not communicated; but thousands of medical men must see to it that intelligent application is made of that precious knowledge

Recent events have brought into strong light a new function of the medical profession which is sure to be amplified and made more effective in the near future I mean the function of teaching the whole population how diseases are caused and communicated, and what are the corresponding means of prevention. The recent campaign against tuberculosis is a good illustration of this new function of the profession. To discharge it well requires in medical men the power of interesting exposition, with telling illustration and moving exhortation.

Obviously, the function calls for disinterestedness and public spirit on the part of the profession; but to this call it is certain that the profession will respond. It also calls for some new ad justments and new functions in medical schools, which should hereafter be careful to provide means of popular exposition con cerning water supplies, foods, drinks, drugs, the parasitic causes or consequences of disease in men, plants and animals, and the modes of communication of all communicable diseases.

Medical museums should be arranged in part for the instruction of the public, and with some suitable reservations should be statedly open to the public. The medical schools should also habit ually provide popular lectures on medical subjects, and these lec tures should be given without charge on days and at hours when working people can attend In other words, selected physicians should become public preachers, as well as private practitioners America has much to learn from Europe in regard to this public-spirited service on the part of the profession.

The University of Medical Sciences.

Dr. William Henry Welch of Johns Hopkins University said:

To have recognized fully from the beginning of his administra tion the importance of this vitalizing union of the medical school with the university, to have striven patiently with full grasp of the problems and with intelligent sympathy with the needs of medicine for the uplifting of the standards of medical education, and, with the aid of his medical colleagues, to have planted these standards where they now are in the Harvard medical school, is not the least of the many enduring services which President Eliot has ren dered to American education, and, in behalf of our profession, I wish to make to you, sir, on this occasion, grateful acknowledgement of this great and beneficent work.

During the last two decades we have witnessed in this country the extraordinary rise of practical laboratory instruction from the weakest to the strongest and best organized part of our medical curriculum of our better schools. Our laboratory courses are, I believe, in several instances more elaborate and occupy more time than corresponding ones in most foreign universities.

It is, however, in my judgment, an error to suppose that from the point of view of science any fundamental distinction exists between the clinical and so called laboratory subjects other than that based on differences in the subject-matter of study. The problems of the living patient are just as capable of study by sci entific methods and in the scientific spirit and they pertain to independent branches of medical science just as truly as those of anatomy, physiology or the other so called laboratory subjects. All of the medical sciences are interdependent, but each has its own problems and methods, and each is most fruitfully cultivated for its own sake by those specially trained for the work.

There is a highly significant and hopeful scientific movement in internal medicine and surgery to-day characterized by the establishment of laboratories for clinical research, by the application of refined physical, chemical and biologic methods to the problems of diagnosis and therapy, and by the scientific investigation along broad lines of the special problems furnished by the living patient

The most urgent need in the medical education at the present time in this country I believe to be the organization of our clinics both for teaching and for research in the spirit of this modern movement and with provision for an intimate, personal contact of the student with the subject of study as he finds in the laboratory

In addition to the undergraduate instruction, our laboratories at present furnish better opportunities for the prolonged, advanced training of those intending to make their careers in anatomy, physiology, pathology and other sciences, than are afforded by most of our hospitals to those who aim at the higher careers in medicine and surgery. A further disadvantage is that while the former class, after good, scientific work may reasonably look forward to desirable positions as teachers and directors of laboratories, the latter, however high their attainments, in consequence of the separation of the medical school from any control over the ap pointments to the hospital staff, can not anticipate with any de gree of assurance similar promotion in their chosen lines of work, and consequently the medical faculty has not so wide a field of choice in filling the clinical chairs as in filling those of the auxiliary sciences

The removal of these deficiencies on the clinical side of medical education in America requires some reorganization of its staff on the part of the hospital, or at least its voice in appointments to the hospital staff. So far as our resources permit, we have, I think, accomplished this reform at the Johns Hopkins Medical School and Hospital. The welfare of the patient is the first obligation of the trustees of the hospitals and of physicians in attendance, but nothing is more certain than that cordial coöperation between medical school and hospital best subserves the promotion of this welfare Fortunate the hospital and fortunate the patients brought into such relations with the Harvard medical school

Award of Honorary Degrees.

President Eliot awarded the honorary degrees as follows· •

Honorary Doctor of Arts.—Charles Allerton Coolidge, architect, designer of the buildings.

Honorary Doctor of Science.—Dr. Simon Flexner, New York.

Doctors of Laws.—Dr. John Collins Warren, Boston; Dr. Henry Pickering Bowditch, Boston; Dr. Jose Ramos, Mexico; Dr. Franz Keibel, Freiburg, Germany; Dr. Charles Scott Sherrington, Liverpool, England; Dr. Francis John Shepherd, Montreal; Sir Thomas Barlow, London, England; Dr. Abraham Jacobi, New York.

The Triennial Dinner.

This was held in Memorial Hall at the close of the exercises. About 700 guests and students were present. Dr. Alfred Worcester, president of the association, presided. Speeches were made by President Eliot, Governor Guild, Professor Welch, Professor Jacobi, Sir Thomas Barlow, Dr. Warren, Professor Keibel and Senor Ramos. All the speeches contained allusions to the new medical school, and the chairman's reference to the occasion as "one common brotherhood" of the medical fraternity all over the world called forth prolonged enthusiasm.

President Eliot emphasized the religious side of medical science, and referred to the deep religious sentiment prevailing in the music rendered by the alumni chorus at the different exercises. He counseled the medical profession to get together and work together in harmony and coöperation to attack moral as well as the physical evils which infest human society. Governor Guild made a most stirring address on the achievements which Massachusetts and Massachusetts men have accomplished for the betterment of mankind. He recalled three notable advances in public health legislation enacted by the Massachusetts legislature during the year 1906, namely, the state care and education of feeble-minded children; the compulsory medical inspection of school children in all the schools of the state, and the law regulating the sale of "patent medicines" containing poisonous drugs.

Sir Thomas Barlow said that he and his colleagues never dreamed of seeing such a vision of beauty, of charm, of absolute adaptation to the needs for which such buildings are erected as that which he had witnessed on this occasion.

Professor Jacobi said that the astounding impression made by the new medical school took him back to the age of Pericles and Phidias.

Congratulatory speechs were made by Professor Keibel and Dr. Ramos. The ceremony was fittingly closed by Prof. J. Collins Warren, who announced that a large general hospital in connection with the new buildings would soon be erected, and that plans were well completed for beginning the undertaking at a very early date.

Correspondence

The Attacks on the American Medical Association.

SAN FRANCISCO, Sept. 21, 1906.

To the Editor:—Please allow me to congratulate you most sincerely on the presentation, in recent issues of THE JOURNAL, of the facts pertinent to the Walker resolutions, which were introduced at the Boston session, and also the explanation of the attitude of the *Medical Record* in its despicable attack on the Association.

In regard to the Walker resolutions, it is rather unpleasant to me to note that my motion, which, you will recall, was to reconsider the motion which placed these resolutions on the table, has been rather generally looked on as an indication of approval of these resolutions. This is most emphatically an error. Dr. Happel correctly stated the intent of my motion in his reply to Dr. Carstens' letter. My desire was to emphasize the rejection of the proposed resolutions, and to prevent any attempt at their subsequent consideration. The President ruled my motion out of order and, while I disagreed with him as to the correctness of his ruling, I did not consider it a point of sufficient importance to raise an objection.

In regard to the oft-reiterated claim of dissensions in the ranks of the Association, of course, I can speak only for our state, but, so far as California is concerned, I take great pleasure in advising you that never before, within my knowledge of society affairs, has there been such a general approval of the American Medical Association and of its many and various important undertakings. Never has dissension been further away than at the present time.

PHILIP MILLS JONES

Standardization of Suprarenal Products.

DETROIT, Sept. 25, 1906.

To the Editor:—A very erroneous impression is likely to be made on the minds of your numerous readers by your editorial on page 944 of THE JOURNAL, September 22. To 19 men out of 20 the clear meaning of the article is that manufacturers do not standardize their suprarenal preparations, whereas, speaking emphatically for ourselves, we do standardize these products, with special reference to our adrenalin and adrenalin solution, ointment and inhalant. We have always done so. In THE JOURNAL as far back as 1902 (see page 150, Jan. 18, 1902), our exact method of standardization was set forth in the fullest detail by our chief pharmacologist, Dr. E. M. Houghton.

We have no objection to government supervision over the suprarenal preparations of the market; some of them need it. But the very thing which you are urging we have performed systematically ever since we began to market *any* of the preparations of the suprarenal gland, standardizing each and every lot of every single preparation and guaranteeing its physiologic activity.

If you will refer to page 1732 of the last edition of the National Dispensatory you will find likewise a complete working method for the assay of adrenalin and other products which are not susceptible of chemical assay.

PARKE, DAVIS & CO.,
Per E. G. SWIFT, General Manager.

Populations of Cities in the Educational Number.

PORTLAND, ORE., Sept. 19, 1906.

To the Editor:—In the Educational Number of THE JOURNAL, August 25, in giving the population of cities, you give Portland, Ore., 98,655, and, while this is taken from the United States census of 1903, it places our city in an unfair position. Our city to-day has a population variously estimated at from 150 000 to 200 000. From all available sources the conservative estimate places our city at 175 000, and this is not "hot air." We have substantial facts to bear us out.

I have asked Governor Chamberlain, Mayor Harry Lane, M.D., of Portland, Auditor Devlin of Portland, and Tom Richardson, manager of the Portland Commercial Club, for estimates, and will enclose their replies. Portland has not been advertised as most western cities have been, and is comparatively little known in the East, and it is only just to give

BYRON E. MILLER, M.D.,
Secretary of the Board of Medical Examiners of the State o
Oregon.

[The letters which Dr. Miller enclosed estimate the present population of Portland at from 150,000 to 178 705. Since the statistics referred to were for last year, the growth in population *subsequent to 1905*, while a matter for congratulation, is immaterial. The figures published were taken from the official estimates made by the Census Bureau in 1903, so as to have a recognized basis. We are glad to give publicity to the facts brought out by Dr. Miller.—ED.]

The Teaching of Medical Jurisprudence.

PHILADELPHIA, Sept. 8, 1906.

To the Editor:—A valuable service to the cause of good medical education was done by your editorial August 25 concerning the extent of teaching of medical jurisprudence i American medical schools. During a considerable part of my active professional life, I was chemist to the coroner and district attorney of this city, and had, therefore, much opportunity to see the necessity of instruction in the determination of causes of death. It seemed sad to see the vast amount of valuable material that was allowed to go to waste in connection with numerous and varied forms of violent death.

In this city the coroner appoints one or more physicians, who make the necessary postmortems and report to the office. As is known throughout the nation, Philadelphia has been for many years in the grip of a political ring, which has no superior in the world for corruption and obstruction. The coroner's office is most important to the great corporations. Verdicts from the coroner have important bearings on damage suits, and in the years in which I was familiar with the coroner's office in this city, it was the custom of one of the street railway companies to give money, generally $5, to the coroner's clerk when a death on that road was under inquiry: In one case, the clerk wanted $10 (probably a difficult case!), but the road would not give more than $5. The result was a verdict blaming the railroad company. The late Mr. Singerly of the Philadelphia *Record* was the principal officer of the road. He immediately set his reporters to work on the records of the coroner's office, exposed a startling amount of corruption and broke up the whole combine by publication of all the details in the *Record*.

It has so happened that almost at no time during the past forty years in this city has a coroner's physician been connected with a medical school in a capacity that would enable him to utilize the material for instruction of students. Most of them have had no teaching positions, and many could not obtain such. In one case a teacher of pathology in a prominent local school was coroner's physician, but he had no interest in medical jurisprudence properly so called, and was, indeed, so unreliable that he would have been a misleader more than a leader.

In THE JOURNAL, September 8, exception is taken by a correspondent to your remark that certain New York schools make no mention of the subject; it is stated that a judge of a New York court delivers fifteen lectures to third-year students at Long Island College. I do not desire to cheapen in any way the work of the person in question, especially as I have not the slightest knowledge of the character and scope of the course, but I wish to state emphatically that lectures by a member of the bar, however eminent and able, are not sufficient as instruction in medical jurisprudence. Experience with trials in criminal courts will amply convince any physician that no lawyer fully appreciates the problems and methods of the science of medicine. For many years I have been a member of the Medical Jurisprudence Society of this city, and I have heard many lawyers, some of them eminent and with a large criminal court experience, discuss question of medical jurisprudence. In most cases they are wholly out of line with the scientific aspects of the case.

The probability is that lectures by a lawyer will cover questions of ethics, general and legal, limitations of professional duties and rights, and cognate questions, but what the medical student needs is practical instruction in the determination of the cause of death. He should have opportunity to see and examine the bodies of the drowned, poisoned, shot and strangulated and victims of other violent deaths; to learn, not by reading or listening, but by seeing, the distinction between still-born and murdered infants, and so on. Then there is the vast field of insanity, so misunderstood by the community at large and so mistried by the courts. In one famous case in this county, in which the evidence of delusional insanity was as clear as day, the trial-judge, one of the most able and honored of the Philadelphia judiciary, shouted out in antagonism to one of the defense witnesses: "If this man is insane, then I wish to say that this is the kind of insanity for which we hang men in Pennsylvania." No, lawyers alone can not conduct a course of medical jurisprudence..

HENRY LEFFMANN.

Nostrums and Advertising.

GUM SPRINGS, VA., Sept. 17, 1906.

To the Editor:—On receipt of bill for renewal of my subscription to the *Monthly Cyclopedia of Practical Medicine*, I acknowledged it by writing them the following letter:

GUM SPRINGS, VA., Aug. 4, 1906.

F. A. Davis Co., Philadelphia.

Gentlemen:—You favor of the 3d inst. received, enclosing bill for subscription to the *Monthly Cyclopedia* for 1906.

Permit me to say, first, that I did not subscribe for this journal for 1906. Second, that while recognizing merits which it has, there are considerations found in its advertising columns which will keep my name off its mailing list.

A casual glance reveals advertisements of such frauds as Antikamnia, Anasarcin, Uric-Antagon, Melachol, Ergo-Apiol (Smith), Keimol, Peptomangan, etc. Continuing, I find, under the caption, "Notes and Comments," a series of "writeups" of numerous proprietaries of this class, such as Neurosine, Vin Mariani, Peptomangan, and others. With these facts before me I do not care to subscribe for the *Monthly Cyclopedia of Practical Medicine.*

Very respectfully,

W. K. McCOY, M.D.

In reply to this I received the following letter:

PHILADELPHIA, Aug. 8, 1906.

Dr. W. K. McCoy, Gum Springs, Va.

Dear Doctor:—Your favor of the 4th inst. duly received. We note that you have passed condemnation on our journal for carrying the ads of firms that have been and are occupying advertising pages in all the leading medical journals of the country, with the exception of THE JOURNAL of the A. M. A., which, however, carries the ad of Vin Mariani, which you refer to in your letter as unethical.

When we feel assured that the mass of the medical profession share your views, we will then take up the question and decide whether or not to continue to publish our journals. Certainly we cannot compete with other publishing houses if we are to be debarred from utilizing this source of revenue which they enjoy. As probably less than a half dozen doctors have expressed an unfavorable opinion of our advertising in five years' time, our opinion is that the mass of the profession are not in sympathy with the views which you express.

This, however, is not to be construed as an endorsement of any pharmaceutical preparation. The idea that we wish to convey is that at present the question is too vague for settlement. We consider the good will of our customers as of a great deal more importance than the interests of an advertiser, and whenever we are convinced that the sentiments of our subscribers are becoming in accord with you own, we shall then, as above stated, decide whether to continue our journals without advertising or discontinue them altogether.

Very truly yours,

F. A. DAVIS COMPANY.

Is it not time that physicians let publishers of medical journals know their opinion regarding the advertising of nostrums? This firm says that their "opinion is that the mass of the profession are not in sympathy with the views which you [I] express." Are they correct? If not, is it not time for us to let them and other publishers know it? Very respectfully,

W. K. McCOY, M.D.

[EDITOR'S NOTE:—If every physician would take the trouble to do as Dr. McCoy did, there would soon be a radical change in the advertising pages of many of our journals, and the most effective blow would be struck at the nostrum evil that it is possible for the profession to strike. Every physician will acknowledge that if the newspapers should refuse to accept the alluring advertisements of fraudulent "patent medicines," the fraudulent "patent medicines" would become a minus quantity. If medical journals should stop publishing advertisements of nostrums, nostrums would soon cease to exist, or nearly so. The F. A. Davis Company says that THE JOURNAL of the American Medical Association carries the advertisement of Vin Mariani. The advertisement of Vin Mariani has not been in THE JOURNAL of the American Medical Association for five years.]

The Oppenheimer Institute and Its Endorsers.

OIL CITY, PA., Sept. 27, 1906.

To the Editor:—The following is a copy of a letter to the *Literary Digest* and Mr. Wagnall's reply. The letter is so wholesome, and its tone on the whole so fair and candid, that I believe it should be given space in THE JOURNAL:

OIL CITY, PA., Sept. 22, 1906.

Funk and Wagnalls, New York.

Gentlemen:—Your circular letter announcing the coming of a new magazine from your press, *The Circle*, and asking that I pledge my support to the new venture by filling and returning the "enclosed card" reached my desk yesterday. Coincidently, and with the same mail, the *Digest* and *Collier's* for to-day, September 22, were received.

It then occurred to me that I had before me a strange combination. On my right, its pages open on the last of the series, "The Great American Fraud," by Samuel Hopkins Adams, lay *Collier's Weekly*. On my left, its advertising pages given to the endorsement of the same, lay the *Digest*. Between the two, pleading, with a wealth of rhetorical diction, for my support, lay the letter.

Judging from its tone, together with the preliminary introduction of the magazine in embryo, the purpose seems plain, i. e., the uplifting of the home circle—hence the title, *The Circle*.

Assuming that a great many of the *Digest* subscribers belong to the medical profession, and as one of the class, I believe we should know in advance the policy which the advertising department of *The Circle* intends to maintain.

Will my sons and daughters in reading the advertising pages of this new magazine

"Find themselves stricken with fear and dismay,
Feeling God or the devil has led them astray?"

A question was then suggested, "Why have I never read an abstract of 'The Great American Fraud' in the *Digest?*" I turned to the *Digest* at my left for the answer. It says (see advertisement of the Oppenheimer treatment):

"The Alcoholic Craving, by Means of the Treatment, is Absolutely Removed in 12 to 48 Hours, and the Patient is Permanently Restored to a Normal Condition."

Impossible. Contrast this statement with the letter written to Oppenheimer by America's honored and loved Mark Twain, in which the Oppenheimer doctor is invited to put his business on a basis of common honesty, etc. Think of it! A man of Mark Twain's standing is moved to invite one, whose dishonest claims have found voice in the *Digest*, to put his business "on a basis of common honesty."

Turning again to the last of the series by Mr. Adams, we are shocked to learn of Mr. Wagnalls, of Funk and Wagnalls, lending his influence to the fake, and with "no personal knowledge of beneficial results or otherwise." Money makes fools of us all. There is that about printers' ink which to the average mind suggests truth. A printed statement will be believed where a verbal one would perish in doubt. How that power has been abused! What a power this has given the press! What a pity to betray such unbounded confidence, such a trust. I am sure that *The Circle* will be a gem in the literary world; if its purpose is to elevate the home, it must necessarily follow that its advertising pages should be kept clean. Promise this, and my influence, small though it is, my voice, weak as it is, my money, scarce as it is, will be gladly given to welcome the coming of *The Circle*. Very truly your,

J. C. O'DAY.

FUNK AND WAGNALLS COMPANY,
Office of the Vice-President.
NEW YORK, Sept. 26, 1906.

Dr. J. C. O'Day, Oil City, Pa.

Dear Sir:—Your letter of 22d inst. is before me. Concerning my name used by an institution, I would say that I am not responsible for the partial statements made by others. When I wrote to Mr. Clemens last November I was particular to say that "my name was used at the beginning" (over twelve years ago) "of the institution *through misunderstanding. Some years ago I positively ordered the withdrawal of my name from the list of advisory directors.*" The original representations made me were quite different from what it seems the institution now is. There never was any money in it. Indeed, if any had been, I positively would have declined in the very beginning. I am not constructed in that way at all. Nor can you find my name anywhere else.

I am pleased to add that the advertising department of the *Literary Digest* has struck that institution off from its list of advertisers admissible to its columns. I am glad Mr. Adams has shown up the concern.

Thanking you for your good words in behalf of *The Circle*, I remain,

Yours very kindly,
A. W. WAGNALLS.

The work of revelation that Mr. Adams has been carrying on in *Collier's* is having its effect, and we who claim to represent all that is high and good in the medical world should willingly encourage those who are giving their columns to the cause.

Very truly yours,
J. C. O'DAY.

Interstate Reciprocity and Frauds in Medical Schools.

SAN FRANCISCO, Sept. 28, 1906.

To the Editor:—The September 15 issue of your esteemed JOURNAL contains a reply of Dr. Harison, secretary of the Michigan Board of Registration, to Dr. Tait of California (letter September 1), and to Dr. Harvey of Massachusetts (article August 25), both of whom consider that system as either pernicious or dangerous, at least under present conditions.

The California statute provides for reciprocity in the discretion of the board of examiners, but the board has thus far remained outside of the reciprocity fold, although often invited to enter. It may interest the profession to know that the reciprocity clause of the California statute was before the Supreme Court of that state in the case, Ex Parte Gerimo, decided on in 1904. Counsel of Gerimo, an ex-judge of the court, attacked the law on the ground of the alleged unconstitutionality of the clause in question. Dr. Harison himself has pronounced against the constitutionality of the particular clause, assigning as his reason that it fails to recognize the so-called rights of practitioners licensed without examination under the former legislation of other states. This objection was directed by the ex-judge against the entire act. The Supreme Court, however, brushed the objection aside, holding that the reciprocity provisions were not an integral part of the statute; that they might be unconstitutional without impairing the validity of the remainder of the act; in which event, the court declared, the effect would be to subject all applicants to the examination. Of course, if Dr. Harison is right in his contentions that the provision for reciprocity is unconstitutional, then all hope for reciprocity between California and her sister states is, under present conditions, gone; for certainly the Board of Examiners can not, at the instance of the enthusiastic apostles of that system, make the statute constitutional.

Dr. Harison distinguishes between absolute and what he is pleased to term restricted or individual reciprocity. The California act would seem to be broad enough to include both forms. Nevertheless, the discretion expressly conferred on the board would have to be exercised within the limitations of the statute, for in California, as elsewhere, the right to reciprocate is derived from the statute. In the language of the act itself, the requirements of the other board must have been at the time of issuing the certificate, in no degree or particular less than those of California at the time it is presented for registration. Is it certain that the requirements of the boards seeking to exchange certificates with California are in no degree or particular less than those of California at the present day?

In California the applicants are known to the examiner by number only, and the secretary can not be an examiner. Judged by the statutes, the ties of blood and of friendship, and more sordid considerations perhaps, would seem to be particularly strong with the medical alma mater, and in this state the legislature has surrounded even the Board of Examiners, although chosen by the profession, with safeguards against fraud. In California the examination of candidates is entirely in writing and the papers must be filed. Any state anxious to reciprocate with California may thus readily ascertain whether the standard of medical knowledge exacted by that state is fully up to her own. Dr. Harison says that under a reciprocity agreement the boards may and are expected to go behind each others' certificates. Michigan, he declares, exercises her right to go behind credentials. Now, if it is advisable that the credentials of an individual applicant should be reinvestigated, why is it not equally advisable that the reciprocating board should have the examination papers of the applicant before it, for without such an inquiry how may it determine whether or not he possesses the qualifications which would have been demanded of him had his application be an original one? All this greatly multiplies the labor the boards, and furthermore, it is contrary to the spirit an purpose of reciprocity. It is not reciprocity at all.

The California board has up to the present time doubted th legality and advisability of reciprocity between herself and the states willing to exchange certificates with her. Nevertheless, she has always been willing to stand shoulder to shoulder with her sister boards in the task of providing competent physicians for the people. She has not favored reciprocity because it looked too much like abdication and surrender of sovereignty when absolute, and as entailing arduous duties and apparently almost impossible of conscientious fulfillment, when restricted and individual. In place of the doubtful advantages and the dangerous tendencies of reciprocity, so clearly illustrated by Dr. Harvey in his admirable paper, California has endeavored to bring about a system of coöperation between boards of examiners for the common good of the profession and the people, whose interests are, after all, identical. Believing that insufficient medical education was the disease responsible for boards of examiners, the California board has sought to take the evil at its source as far as the law permitted it, and two years ago invited interboard coöperation in the matter of the investigation of medical diplomas. The board instructed its secretary to forward to other boards the results of its investigation of credentials, inviting similar information in return. Numerous instances of grave irregularities and even fraud on the part of supposedly high-grade colleges were reported by California. In response a few boards approved of the "plan of reporting candidates failing at the examinations!" None sent any information relating to investigation or rejection of diplomas. What wonder, then, that the impression that eastern boards, Michigan among the number, still failed to go behind diploma and affidavit, so universally the practice under the old régime, should prevail in California. Dr. Harison has neither published nor furnished us with statistics to the contrary.

The California board lays great stress on the investigation of credentials, in obedience to the state statute; and, before reciprocity with other boards can be considered, the members of the board would certainly wish to know whether similar functions are exercised by the boards seeking to reciprocate with California, and also which boards go behind the applicant's affidavit as to his preliminary and medical education.

On behalf of the board I would like to inquire the extent of the rejection of diplomas, if any, and whether any case is within their knowledge, where a certificate procured by fraud was canceled on that ground.

WILLIAM C. TAIT,
Attorney for California Board of Medical Examiners.

San Francisco, Sept. 21, 1906.

To the Editor:—September 1 you published a letter by Dr. Dudley Tait in which statements were made derogatory to the good name of the College of Physicians and Surgeons of San Francisco. Each and all of those statements that in any way reflected on the college mentioned were incorrect. Regarding this case Dr. Tait secured no information and made no effort to secure information from the college authorities. He ignored the fact that this student secured advanced standing on good and sufficient credentials, and took his required work in the summer courses which this college was then conducting. He ignored the further fact that this student was in attendance in the freshman and sophomore years. I have no desire to infringe on your space, but I ask the profession to reserve judgment until both sides are heard. To go into details here would require more space than you are probably willing to grant. Any one who desires the truth regarding the matter may obtain it by writing to me.

D. A. Hodghead,
Dean, College of Physicians and Surgeons of San Francisco.

Internal Administration of Antitoxic Sera.

East Orange, N. J., Sept. 21, 1906.

To the Editor:—May I inquire if any readers of The Journal have administered antitoxic serum in other ways than by subcutaneous injection, and if so, what has been their experience? In England and elsewhere it has been demonstrated clinically that serum given *per os* or *per rectum* is effective, yet one seldom or never hears of these methods being practiced in this country. As the question is of considerable practical importance, it may be interesting to refer to some of the literature on the subject which justifies the change of method.

Within the last few days it has been announced that Professor Behring's latest remedy against tuberculosis, called tulase, is about to be given an extensive trial in the hospitals of France and Germany, and, by his direction, it may be introduced into the system either by subcutaneous injection or by swallowing. This is in accord with the experimental work of others. Figari (*Berlin klin. Woch.*, Jan. 18, 1904), experimenting with the blood of animals immunized against tuberculosis, found that it contained substances which administered to guinea-pigs internally in the form of a powder, raised the agglutinating power of their blood serum and antagonized the action of tuberculous toxins. The same effects were produced by him in the human subject. Roncagliolo administered a similar serum to his patients internally, and also claims to have increased the antitoxic power of the blood with an encouraging therapeutic effect (*Medical News*, Feb. 27, 1904, page 403).

Sera are also efficacious when given *per rectum*. In the London Temperance Hospital, the administration of various sera by rectal injection has been practiced for the last six years, and it has been found they have precisely the same effect as when injected subcutaneously; the action seems equally rapid, while the danger of spreading inflammation and local abscesses at the site of injection is removed (*Lancet*, May 5, 1906).

In an article on "The Treatment of Malignant Endocarditis by the Rectal Administration of Antitstreptococcic Serum," a writer states that he has used this serum in more than 200 cases of septic infection of various kinds, but found that the usual method of injecting the serum under the skin was open to objection. It was so painful that patients, especially if they were stout, dreaded the injection, and it was liable to be followed by rashes of the skin and joint affections. The administration of the serum per rectum was therefore tried, and the result has been so satisfactory in over 25 cases as to lead to the abandonment of subcutaneous injection of the serum (Ib., April 21, 1906, p. 1103).

In a communication on "The Use of an Antistreptococcic Serum in Gonorrheal Infections and in Certain Cases of Purpura Hemorrhagica," Fenwick and Parkinson state that during the last two years they have never encountered a genuine example of gonorrheal rheumatism, either in hospital or private practice, that was not immediately benefited by the serum given per rectum. The effects were immediate, pain being relieved after the second dose, and the tenderness and swelling of the joints rapidly subsiding after the third (*Lancet*, May 5, 1906, p. 1214).

Clinical evidence of the value of antidiphtheritic serum when given by the mouth is furnished by the communications of various physicians to the medical journals (see "Progressive Medicine," Sept. 5, 1905, p. 30). The experience in every case is very similar. One physician relates that two years ago, while injecting the serum, something went wrong with his syringe, and the serum was given by the mouth, with the very happiest results as compared with his previous orthodox cases. Since then he has never used the syringe for this purpose. All his cases were verified by bacteriologic examination (*Brit. Med. Journal*, Dec. 31, 1904, p. 1751). For eight years Paton (Ib., May 5, 1906, p. 1032) has been using by the mouth serums both *normal* and the product of immunity, with remarkable therapeutic results, and the English branch of Parke, Davis & Co. has for years supplied him with a low potency antidiphtheritic serum especially made for oral use.

As to the objection that the digestive juices destroy the antitoxin before it can be absorbed by the system, recent experiment proves the contrary.

"At the last meeting o. the Society of Biology held July 28, 1906, M. Catacuzene and M. Riegler communicated a paper on 'The Toxic Phenomena Following the Administration, *per os*, of Dead Glanders Bacilli.' They had observed that the intrastomachal injection of dead glanders bacilli gave rise to grave symptoms in guinea-pigs, whether young or full grown. The symptoms were those of poisoning followed by death at longer or shorter intervals, or by recovery according to the dose of microbes employed. The preparation of bacilli employed was a culture on glycerin agar, emulsionized in alcohol, in which the bacilli died in a few hours. This emulsion was then centrifuged and the dead bacilli were dried *in vacuo*. When injected into the intestine the dead bacilli gave rise to toxic symptoms varying in gravity with the size of the dose. Not only the soluble portions of the substance, but the very bodies of the bacilli themselves passed out through the intestinal walls and could be detected in the lymphatic glands, in the spleen and in the lungs, in which last organ they produced foci of bronchopneumonia. Small doses given by the mouth produced a tolerance for the poison, provided that three months were allowed to elapse between two doses." *Lancet*, Sept. 8, 1906, p. 688.

To the bacteriologist who injects his serum into guinea-pigs, horses and other of the lower animals, the method employed is a matter of indifference; but to the general practitioner who deals with nervous, excitable children, or with adults who dread the slightest pain, be it only the prick of a needle, it is often an advantage to be able to administer remedies by the mouth instead of subcutaneously, and there is the further advantage of not having to fear the disastrous results which sometimes have followed the injection of an impure serum; at least, this danger is greatly diminished if not actually abolished.

Edward M. Merrins, M.D.

Plaster-of-Paris Dressings.—Dr. R. O. Meisenbach, in th *American Journal of Orthopedic Surgery*, June, has investigated the properties of plaster-of-Paris and brings out som important practical conclusions. The plaster should be manipulated during the initial set, but not after the actual setting has begun. The practice of completing the plaster dressing by rubbing either water or plaster cream on it after th actual set has taken place is entirely wrong, he declares, an tends to weaken rather than to strengthen the dressing Sodium chlorid tends to hasten the setting, but weakens th strength in proportion to the amount added; dextrin increase the strength, but lengthens the time of setting. Starch i small amounts also increases the tensile strength. Portlan cement strengthens the bandage in all its essentials. It als renders the bandages more porous, which permits their bein worn with greater comfort and for a longer time.

Miscellany

Leukemia Treated Successfully with Arsenic.—In the London *Lancet*, Aug. 18, 1906, F. L. Dickson reports the case of a man, aged 24, who had an acute, painful enlargement of the inguinal, right axillary and postcervical glands with slight increase in dulness of the splenic area. The case was diagnosed (after blood examination) as one of acute or subacute lymphatic leukemia and a fatal prognosis was given. Dickson administered liquor arsenicalis, 5 minims, three times a day, and after three days the glandular swellings were less and there was marked improvement in the condition of the blood. The dose of the liquor was increased rapidly to 15 minims, and then gradually diminished. In about two months' time the patient made a complete recovery.

Alcoholism.—In an address given before the medical society of Munich (rep. in *Med. Klinik*, April 1, 1906), Kraepelin credits nearly one-half of the admissions between November, 1904 and November, 1905, to the new psychiatric clinic of that city to alcohol; of the imbecile, 42.9 per cent.; of the epileptics, 65.1 per cent. among the males and 28.5 per cent. among the females; of the manic-depressive cases, 43.5 per cent of the males; of the traumatic psychoses, 23.1 per cent.; in arteriosclerosis, 64 per cent. of the male cases, and of the paretics, 51.9 per cent. in men and 43.5 per cent. in women. With the elimination of alcohol, he thinks, one-third of the cases of paresis could be avoided. Beer drinking seems to be responsible for alcoholic dementia to a large extent in Munich. Kraepelin believes in educational work against alcohol, beginning in the school, and the encouragement of total abstinence.

Diagnosis of Stomach Disorders.—Burdick (*American Journal of Clinical Medicine*) says that in treating stomach troubles the physician should first attempt to answer the following questions: 1. Might the symptoms be caused by any trouble exterior to the stomach, and if so, what? 2. Is the stomach normal as to size and location? 3. Is there food stagnation—in other words, does the stomach empty itself with reasonable promptitude? 4. Are the secretions normal or abnormal? 5. Are there evidences of inflammatory change or other morbid conditions of the mucosa? Preceding this inquiry he should ascertain the family history, the duration of the disease, coexisting affections, the presence and character of pain, and effect of eating and of alkalies on it, conditions of the occurrence of nausea or vomiting, location of tenderness, and the condition of the bowels. The routine attention to these points renders diagnosis and treatment much less difficult, and avoids mortifying mistakes.

Human Sympathy Doctor's Highest Need—A Layman's View.

The following by Chancellor Andrew S. Draper, superintendent of education, New York, appeared in the Chicago *Tribune* as a "lay editorial":

It is too bad that people seem so unable to get rid of a doctor who has become a piece of the family bric-a-brac, when they really want to. The only national society yet to be organized which I can think of, is one which will give the members courage to get rid of physicians of whom they have tired and who have more nerve than they themselves have. If one doesn't like a lawyer he goes to another with his next case, but if he doesn't like his physician he holds on to him with a sternness which philosophy never has explained and experimental psychology has never yet solved. If men and women were not so subject to clap-trap and pretense, they would have better health, pretenders would not be so common nor so persistent, and physicians of worth would be recognized more widely and more uniformly regarded. There is room here for just one more philanthropic national organization, and we ought all to give support to one that would take this good cause in hand.

It needs no mere theory and no bare logic to show that science and sympathy must go together in the successful practice of medicine. The life of every successful physician makes it obvious enough. The lower ranks of the profession are full of men who blunder along and hold on to a weakling or an unfortunate with all of the persistence which credulity permits; but the upper ranks of the profession hold the really successful men in whom human sympathy unites with learning to develop the great soul whom the world recognizes on the instant and for whom it always is eager to remove its hat. The men who are capable of service and who are anxious to serve are the only men worthy of recognition in the medical profession.

And all of us have some sort of claim on the most eminent and successful medical men, and the qualities that have made them successful make them respect it. One who has served whoever called, for small fees or no fees, at all times of day or night, and has come to the time when he can do it no longer and must of necessity discriminate and may in a way fix his own terms, no longer may be bound to respond to every call, but he is bound to have youngsters around him who will, and to keep them straight.

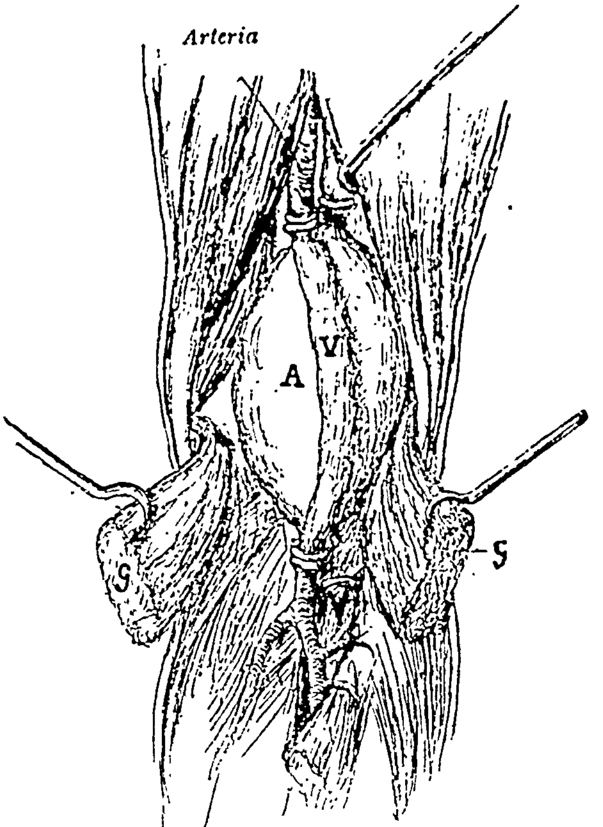
They tell a story of my friend, Dr. Newell Dwight Hillis of Plymouth church, that I do not vouch for, but that easily may be true. It is said that when Dr. Hillis was serving a small church in Evanston, Mrs. Hillis being desperately sick, the young preacher called an eminent specialist, Dr. John C. Webster of Chicago, whose ministrations were successful. Dr. Hillis worried about the bill and after a little went over and said: "Dr. Webster, I can not pay you at once, but I want to know what your bill is, and I will soon arrange it. Here is $50. It is all that I can pay now. Money never can discharge my debt for such eminent services as yours. If you will tell me the amount of your bill I will pay it in full just as soon as I can." Dr. Webster replied: "You keep your money. I owe you as much as you do me. You have made as good in theology as I have in medicine. I will keep Mrs. Hillis out of heaven as long as I can, if you will keep me out of hell as long as you can."

The medical profession is bound to be more than clean and pure and square, more than scientific, and more than sympathetic. It must be steady, cheerful, courageous, optimistic and confident. It is bound to put courage into people to the end that doctor and patient may work together in meeting exigencies and finding the way back to normal health. Half the worth of half the doctors is in their buoyant and bracing temperament.

The medical profession is more than all that; it is a patriotic profession. It is expert on the principles which the state must observe to be healthful and concerning the practices which society must prevent if we are to live in crowded settlements with any degree of comfort and safety. We look to this profession to set up the machinery which may assure the common health and to provide schools, laboratories and hospitals, always expensive, which will make modern scientific knowledge available to the mass and meet the needs of the many who must be overtaken inevitably by accident and disease under the swiftly moving and dangerous conditions of our complex life.

Chloroform Anesthesia.—A. Wilson (*Medical Chronicle*, August, 1906), discusses certain types of accidents from chloroform, which are not well recognized, directing attention particularly to two points. 1. Serious failure of the circulation and impending dissolution are indicated, not by gradual cessation of the respirations, but by exaggerated respiratory movements. 2. In a large class of cases, raising the patient into the sitting position is a most powerful aid toward recovery. Attention was first directed to this procedure and to the reasons for it by Dr. Leonard Hill. These chloroform accidents may result from: 1. Exaggerated action of the muscles in the stage of excitement actively interfering with respiration and circulation. 2. Paralysis or loss of tone of the accessory respiratory muscles so deranging the patency of the respiratory passages that respiration is seriously interfered with. Circulation is also hampered by deficient aeration of the blood and engorgement of the right side of the heart. 3. The specific paralyzing action of the drug on the fundamental nerve centers in the medulla. These accidents happen from some interruption in the orderly progressive course of the narcosis, whereby the circulation or respiration is paralyzed at an early stage of the administration. In the first class of accidents extreme muscular exertion caused by exciting dreams results in sudden heart failure, cyanosis, possibly lividity, with deep, sometimes stertorous, breathing. The signs of danger are the sudden cessation of the struggles and the deep inspirations, associated with dilated pupils and twitching of the arms. The patient should be raised into a sitting position, and the thorax compressed while he is in that position. By alternately raising and lowering the patient, and the steady practice of artificial respiration the whole time, in the majority of cases recovery will ensue, provided always that treatment is begun promptly, whereas if the patient is kept in the recumbent position the danger is increased. In accidents of this class the onset of the failure of circulation is sudden, and the cause mainly due to the paralyzing action of the chloroform on the heart, and partly to the obstruction to the respiration impeding the circulation. It occurs at an early stage of the administration, often before the patient is deeply under. Cases of the second class occur in the later stages of administration from some obstruction to the respiration such as a faulty position of the head and are indicated by less pronounced symptoms. Still Wilson is convinced that if these cases of so-called primary respiratory paralysis were carefully observed, an acceleration of the respiration or signs of increased respiratory activity would be found to precede the final paralysis of circulation and respiration. The symptoms of danger are increased pallor of the face, dilatation of the pupils, exaggerated respiratory efforts, and absence of the pulse. The treatment is the immediate application of artificial respiration, removal of the obstruction to the air passages, and raising the patient into the sitting position to empty the heart. The specific toxic action of chloroform is usually shown first by its action on the circulation and especially on the vasomotors. By this vasomotor paralysis blood accumulates in the splanchnic area and the patient is practically bled into his own vessels and dies with all the symptoms of sudden hemorrhage. In a typical example there is sudden increased activity of the respirations, pallor, dilatation of the pupils and failure of the pulse. Wilson thinks that quickening of the respiration is evident before any change can be detected in the pulse. This condition may occur at any stage of the administration. The symptoms vary according to the degree of anesthesia reached and the condition of the patient. If it occurs early the suddenly-produced anemia will give rise to anemic convulsions. With increased narcosis the muscular disturbance is less, but there is always increased activity of the respiration. This is a gross sign that can not be overlooked, though it is nearly always misinterpreted, he declares. The indications for treatment are to encourage the flow of blood to the heart and nerve centers, to stimulate the heart to renewed contractions, and to restore the blood pressure. With this object in view the patient's head should be placed in a dependent position, the end of the table raised, and energetic artificial respiration performed. Artificial respiration should be applied in such a way that the chest is firmly compressed, so that some pressure is brought to bear on the heart; the intention being not so much to get air into the chest as to stimulate the heart and to raise the blood pressure. The patient ought also occasionally to be raised into the sitting position to prevent the blood stagnating in the vessels of the brain. Prompt treatment, Wilson states, offers good chance of recovery, but exhaustion and rigid chest walls are unfavorable to success. The failure of circulation is so sudden that there is little prospects of drugs being absorbed in time to be of any use. It is better, therefore, Wilson thinks, to rely on artificial respiration.

Substitution of Vein for Artery in Aneurism.—The *Siglo Médico*, Sept. 8, 1906, contains an illustrated description of the successful treatment of a popliteal aneurism by plastic substitution of the popliteal vein for the artery. The operation was performed by J. Goyanes, professor of surgery at Madrid, who credits the idea to Prof. San Martin of Madrid, in 1902. This is the first time it has been applied in the clinic, but experiments on animals had amply demonstrated its feasibility. It has the advantage over other methods, Goyanes says, that the circulation through the artery is retained without trusting to collateral circulation. The sacrifice of the vein is comparatively unimportant at most points where aneurisms are liable to occur. The patient in the present case was a woman of 41, with an extensive fusiform aneurism of the left popliteal artery, considerable arteriosclerosis and a history of syphilis and some alcoholism. The operation included ligature of the artery above and below the aneurism, with compression above. The vein was also ligated above and below the level of the aneurism, and both artery and vein were cut inside the ligatures. The central stump of the artery was then united with the peripheral stump of the vein above the aneurism, and again a similar anastomosis was done below the aneurism. The latter was thus cut off completely from the circulation which passed through the interposed tunnel of vein which lay along the aneurism like a bridge over it. The stumps were sutured by being drawn into the shape of a prism by Carrel's technic. The artery was clamped with forceps above and below the seat of the operation. The lower forceps were taken off first, and then the ones above the aneurism, and lastly the digital compression of the femoral artery in Scarpa's triangle. The blood rushed briskly through the interposed tunnel, and circulation was restored throughout the leg. A fine stream of blood issued from a small accidental puncture hole in the vein, but was arrested at once with a suture. The nerve had been found adherent to the aneurism, which explained the pain previously experienced. The wound healed smoothly, although there was a trifle of suppuration for a few days, evidently due to infection of some gelatin which had been injected as a last resort before attempting surgical intervention. Goyanes thinks that this double arteriovenous anastomosis may possibly have a brilliant future. It might be supplemented by extirpation of the aneurism according to Purmann's technic, especially in case the vein is adherent. The internal saphena seems amply able to take charge of the return circulation in the limb. In the illustration reproduced, A represents the aneurism, V the bridge of vein interposed in the artery in place of the aneurism, and V' the ligated vein below. Goyanes reviews the various other methods of anastomosis of blood vessels in vogue, and states that he has used the Payr technic of anastomosis over a cylinder of absorbable magnesium and



Method of Substitution of Vein for Aneurismal Artery.

found it very safe and simple. The chief drawback is that several millimeters of the vessel have to be sacrificed. His comments on the Matas method indicate that he is not fully acquainted with the principles that govern the technic, or the clinical evidence that has already accumulated in its favor. (See The Journal, Sept. 29, 1906, pages 990, 1017 and 1019.)

Application of Physical Chemistry to Pharmacology.—The importance of physical chemistry to the pharmacologist and physician is shown by T. S. Price in the *Pharmaceutical Journal*, July, by illustrations drawn from the comparative toxicity of different salts as indicated by their power to kill anthrax spores. It is found that mercuric cyanid is far less poisonous than mercuric chlorid, although we should expect the contrary, because it contains the radical of the very poisonous hydrocyanic acid. The explanation of the apparent anomaly is found in the fact that the electrolytic dissociation of the cyanid is less than that of the chlorid. When a compound such as chlorid sodium or sulphate sodium is dissolved in water it separates to a large extent into atoms or groups of atoms, one positive and the other negative, which pass to opposite poles when acted on by the electric (galvanic) current and which, therefore, have been named negative and positive ions, and the process of separation in this way has been called ionization or electrolytic dissociation. A solution of chlorid of sodium contains a mixture of sodium ions and chlorin ions which the electric current separates, the positive sodium ions going to the negative pole and the negative chlorin ions appearing at the positive pole. In the case of sulphate of sodium the separation is into positive sodium ions and negative sulphate ions. The more concentrated the solution of a salt, the less the number of its molecules which separate into ions and the greater the dilution of a solution the more complete the ionization, i. e., the larger the proportion of the salt molecules which are broken up into ions. It has been found that acids which readily undergo ionization when in solution are more powerful as acids and have a correspondingly greater action on the tissues, as a rule, than those which ionize with difficulty. Thus hydrochloric acid ionizes readily and is a strong acid, while acetic acid ionizes less readily and is a weak acid. If in any way we could hinder the ionization of hydrochloric acid we could lessen its activity as an acid. For the weaker acids it appears that the extent of ionization decreases when a salt containing the same negative ion as that of the acid is added to the solution. The acidity of acetic acid is diminished by the presence of an acetate. Mercuric chlorid may be regarded in some respects as analogous to a weak acid. It is a compound of a comparatively weak positive ion with a strong negative one, and it exhibits an acid reaction to litmus paper. If an alkali chlorid is added to mercuric chlorid it is to be expected that the ionization of the mercuric chlorid will be restrained and hence its toxic activity reduced. Such is actually found to be the case, and the disinfectant power of the mercuric chlorid is diminished by the addition of an alkali chlorid such as sodium or ammonium chlorid in proportion to the amount of alkali chlorid added and to the strength of the solution. That is to say, the greater the dilution the greater the tendency to dissociation or ionization and the less the inhibition of ionization on account of the presence of sodium or ammonium chlorid. These additions, therefore, while increasing the solubility of the mercury salt, diminish to a limited extent its toxicity and disinfecting power. Practically, however, as the disinfectant is used in dilute solution a marked diminution of disinfectant power is not to be feared. Still more striking is the effect of the production of certain double salts of mercury or silver on the toxicity of these metals. Thus yellow mercuric oxid dissolves in potassium thiosulphate to form a solution containing a new combination which dissociates into potassium ions and those of a complex group containing each an atom of mercury. The mercury is no longer present as mercury ions and does not exert the activity of the ordinary mercury ion. The salt would be expected to be nonpoisonous and such, in fact, is the case. Similarly the toxic effect of silver salts can be reduced by the addition of sodium thiosulphate: the Ag ion combines with the thiosulphate ion (S_2O_3) to form the complex ion AgS_2O_3, which is non-toxic.

Book Notices

Physiology and Therapeutics of the Harrogate Waters, Baths and Climate. Applied to the Treatment of Chronic Disease by W. Bain, M.D. and W. Edgecombe, M.D. Cloth. Pp. 300. Price, $2.60 net. New York: Longmans, Green & Co, 1905.

This work is based on experimental research and clinical observation, and will be found of most value to those who wish to employ the particular spring referred to. The action and therapeutic value of all natural mineral waters, however, is made clear by the introductory chapter which discusses the chemical and physical action of the waters, both within the body and experimentally. This elementary review of osmosis and electrolysis gives the reader a very much clearer understanding of the subsequent exposition of mineral waters in general, the Harrogate waters in particular. Section 1 is devoted to the pharmacology and the physiologic and therapeutic action, and Section 2 classifies the baths. Section 3 discusses the factors which determine climate, as, for example, temperature, humidity, rain fall, sunshine, winds, etc. Features of the town are briefly described, sanitary conditions, etc. The final section of the book is devoted to a detailed description of the chronic diseases which may be treated by the waters, baths and climate. The authors have logically paved their way for the presentation in tabulated form of the great variety of diseased conditions which have been benefited by the spa treatments. Other factors in the treatment, such as diet, exercise and drug therapy have not been lost sight of. We are glad to note that exaggerated claims of results, which are so commonly made for a treatment so diversified in its application, find an unusually small place in this book.

Physiology of the Nervous System. By J. P. Morat. Authorized English Edition. Translated and Edited by H. W. Syers, M.A., M.D., Physician to the Great Northern Central Hospital. With 263 Illustrations. Cloth. Pp. 680. Price, $7.50 net. Chicago: W. T. Keener & Co., 1906.

There is no subject in medicine which requires a more accurate knowledge of the anatomy and physiology than does the nervous system, in order to be able to reason out the pathologic conditions. The physiology of the nervous system, however intricate, must be fairly well understood by the teacher in order to aid the student to grasp this difficult subject. If this part of the student's instruction is neglected his interest in the clinical study of nervous diseases will necessarily be below the proper standard, as the pathologic reasoning must be based on a knowledge of the anatomy and physiologic relations of the parts involved.

In his researches and writings Morat has elucidated a great many theories and has given to the medical profession advances in the physiologic functions of the nervous system by going more deeply than former investigators into the functions of certain centers and, in some instances, by correcting the opinions of other writers. The chapter on "Superior Systemizations" is of special interest. The illustrations given are of value in connecting the clinical and pathologic findings with the physiology of the part involved. To those interested in the study of the diseases of the nervous system this work can be recommended.

Human Sexuality, a Medico-Literary Treatise on the Laws, Anomalies, and Relations of Sex, with Especial Reference to Contrary Sexual Desire. By J. R. Parke, Sc.B., Ph.G., M.D. (Late Acting Assistant Surgeon, U. S. Army). Cloth. Pp. 476. Price, $3.00. Philadelphia: Professional Publishing Company, 1906.

This is a valuable addition to the literature on the subject. It is a readable volume, and, for most practitioners, will be found more satisfactory than many of the elaborate works which treat of the various phases of the subject in more detail. It presents a summary of what is known of the customs of all peoples as regards sexual selection, betrothal, marriage, divorce, etc., and the relation of the sex problem to modesty, vanity, poverty, wealth, morality, Christianity, civilization, virtue and the welfare of the race. In the main, the attitude of the author is judicial, broad-minded and helpful, but he has been led far astray in his endeavor to treat the subject with entire disregard of so-called prudery. Sexual matters should be treated with perfect frankness, particularly in a work for physicians, but we can not justify the author in his facetious and flippant manner of telling unnecessary stories and of illuminating some pages with headlines of questionable wit. It is regrettable that an author whose general attitude is so evidently wholesome should thus mar his book. The publisher advertises that the book "reads like a novel," which, we submit, is hardly necessary in such a work.

Clinical Bacteriology and Hematology for Practitioners. By W. D. Emery, M.D., B.Sc., Clinical Pathologist to King's College Hospital and Pathologist to the Children's Hospital, Paddington Green. Cloth. Pp. 240. Price, $2.00. Philadelphia: P. Blakiston's Son & Co., 1906.

The present edition of this work contains many improvements over the previous edition. More space is given to the bacteriologic examination of materials from special parts of the body and to the examination of blood, especially with reference to the diagnosis of disease. The technical part of the work has been rewritten to include descriptions of new methods and new apparatus.

Hygiene of Pregnancy. By W. B. Jennings, Ph. B., M.D., Attending Physician (O.P.D.), St. Mary's Free Hospital for Children. Flexible Leather. Pp. 48. New York: Medical Review of Reviews.

This monograph is intended for the use of nurses and expectant mothers. The language used is simple and few technical terms are used.

Marriages

JOSIAH CALVIN McCRACKEN, M.D., Canton, China, to Miss en Newpher of Cleveland, Ohio, September 12.

DAVID HENRY FITZGERALD, M.D., Fond du Lac, Wis., to Miss lian Virginia Gannon of Chicago, October 3.

J. H. DUNCAN, M.D., Killbuck, Ohio, to Miss Alberta Esther gan of Mechanic Township, September 19.

ANDREW MOYNIHAN, M.D., Sauk Center, Minn., to Miss ma Collins of St. Paul, September 25.

HARRY R. BROWN, M.D., Chillicothe, Ohio, October 3.

Deaths

Eduardo Andrade, M.D. University of Georgetown, Medical epartment, Washington, D. C., 1894; a member of the American Medical Association; bacteriologist of the State Board of ealth of Florida; a member of the Duval County (Fla.) edical Society, and one of the most brilliant and popular oung practitioners of Jacksonville, Fla., died suddenly in New ork City September 20, aged 33. The State Health Officer f Florida pays the following tribute to the memory of Dr. ndrade: "Words can not convey nor can human tongue exress the grief which the State Board of Health feels in the oss of its talented associate, who, although young in years, evertheless possessed the mental qualities of an accomlished and polished scholar and scientist, and typified in very act of life all the attributes of a Christian gentleman." The Jacksonville Board of Trade and the Duval County Medcal Society appointed special committees to attend the funeral.

William K. Otis, M.D. College of Physicians and Surgeons n the City of New York, 1885; a member of the American Association of Genitourinary Surgeons, American Urological Association, New York Academy of Medicine, St. Luke's Alumni Association; Hospital Graduates Club; New York County Medical Society and Medical Association of the City of Greater New York; professor of genitourinary diseases in the New York School of Clinical Medicine; attending surgeon to St. Mark's Hospital and the West Side German Dispensary; consulting surgeon to the City Hospital and the Throat and Nose Hospital, died suddenly at his home in New York City, September 22, from pneumonia, aged 36.

Walter Clarke Jackson, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1852; a member of the Alabama State Medical Association before the Civil War, one of the reorganizers of the association in 1868, and for several years its treasurer; once president of the Medical and Surgical Society of Montgomery; one of the ten physicians who in 1872 organized the Social Medical Club in Montgomery, died at his home in Montgomery, September 22, after an illness of only three days, aged 79.

Albert R. Ong, M.D. Columbus (Ohio) Medical College, 1877, a member of the American Medical Association, one of the most prominent physicians of Martins Ferry, Ohio; for a number of years professor of mathematics and astronomy and vice-president of Richmond College; a member of the Board of Pension Commissioners and chief of the Volunteer Fire Department of Martins Ferry, died suddenly at his home in that city, September 22, from acute gastritis, aged 58.

Francis Perley Taylor, M.D. Pennsylvania Medical College, Philadelphia, 1857, L.R.C.P., Edinburgh, 1865, and F.R.C.P., Edinburgh, 1871; one of the founders and a constant patron of the Prince Edward Island Hospital, and for many years a member of the Charlottetown Board of Education; one of the most prominent and beloved practitioners of Prince Edward Island, died at his home in Charlottetown, September 17, after an illness of only half an hour.

Andrew Fine, M.D. Toland Medical College, San Francisco, 1866; one of the best known practitioners of Oakland, Cal.; for 21 years a member of the California State Board of Pension Examiners; consulting physician to the Home for the Adult Blind, and for several terms a member of the Board of Education of Oakland, died at the home of his son in that city, September 20, after a long illness, aged 63.

John M. Buckingham, M.D. Jefferson Medical College, Philadelphia, 1852; a member of the American Medical Association, Ohio State Medical Association, Southwestern Ohio Medical Society and Clark County Medical Society; a member of the staff of the Springfield City Hospital, and health officer of Springfield, Ohio, died suddenly in that city, September 27.

Thomas H. Helsby, M.D. University of Maryland School of Medicine, Baltimore, 1859; surgeon in the Fifth Army Corps during the Civil War, and for 30 years thereafter a practitioner in Williamsport, Pa., died at his home in Baltimore, September 26, aged 71.

Thomas F. M. Phelan, M.D. Bellevue Hospital Medical College, New York City, 1882; city physician of Orange, N. J., in 1891, and health officier, died from general paresis, at a sanitarium in Worcester, Mass., September 11, after an illness of several years.

William B. Foster, M.D. Medical Department of the University of Louisiana, New Orleans, 1850; one of the oldest and most highly respected physicians of Hope, Ark., died September 14, at a sanitarium in Texarkana, after a surgical operation, aged 84.

Charles E. C. Beach, M.D. Fort Wayne (Ind.) College of Medicine, 1905; interne at Hope Hospital, Fort Wayne, in 1903 and 1904, died at his home in Coesse, Ind., September 20, from cerebral congestion, after a short illness, aged 27.

George S. Rittenhouse, M.D. Jefferson Medical College, Philadelphia, 1880, a member of the Cecil County Medical Society, died at his home in North East, Md., September 22, from tuberculosis, after a lingering illness, aged 49.

Samuel Wesley Lippincott, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1897, of Phildelphia, died at the University Hospital, September 22, from hemorrhage due to gastric ulcer, aged 36.

William D. Kerr (Years of Practice, W. Va.), for forty years a practitioner of that state, while making a professional call near his home at Huntington, Dec. 13, 1905, was struck by a railway train and instantly killed.

Thomas C. Dodson, M.D. New York University, New York City, 1849, of Mount Vernon, Texas, died suddenly September 18, at the home of his daughter in Tishomingo, I. T., from heart disease, aged 78.

Daniel M. Skinner, M.D. New York University, New York City, 1858; a surgeon in the Navy during the Civil War, died at his home in Belleville, N. J., September 26, from cerebral hemorrhage, aged 71.

G. W. Wilson, M.D. University of Nashville, Medical Department, 1902, of Westmoreland, Tenn., died at a hospital in Nashville, September 15, five days after an operation for appendicitis, aged 43.

Ambrose H. Martin, M.D. Jefferson Medical College, Philadelphia, 1885; for a number of years a practitioner of Pendleton, Ore., died in Portland, Ore., September 18, after a surgical operation.

Higgins C. Smith, M.D. Bellevue Hospital Medical College, New York City, 1869, died at his home in Broadwell, Ky., September 17, from disease of the stomach, after a long illness, aged 70.

James C. Miller, M.D. Jefferson Medical College, Philadelphia, 1885, of Jeannette, Pa., died at the Westmoreland (Pa.) Hospital, September 22, from pneumonia and uremia, aged about 50.

William J. Cox, M.D. Kentucky School of Medicine, Louisville, 1894, of Uniontown, W. Va., died at the North Wheeling Hospital, Wheeling, W. Va., from nephritis, September 15.

M. M. T. Hutchinson, M.D. Medical College of Georgia, Augusta, 1859, for three years a member of the School Board of Thomasville, Ga., died at his home in that city, August 21.

Richard Sanford, M.D. London (England) Hospital, 1849; assistant surgeon during the Yakima Indian War, died at his home in Glencoe, Ore., August 29, aged 83.

Albert L. Walker (Examination, Michigan) died from accidental poisoning, at his home in Ann Arbor, Mich., August 31, after an illness of two days, aged 57.

H. E. Babcock, M.D. Albany (N. Y.) Medical College, 1855, died at his home in New London, N. Y., September 20, after an invalidism of four years, aged 79.

J. Y. Campbell, M.D. Chicago Medical College, 1865, for 25 years a practitioner of Paxton, Ill., died at his home near Rochester, Ind., September 21.

George W. A. Collard, M.D. Hahnemann Medical College and Hospital, Chicago, 1880, died at his home in Bridgeport, Conn., September 18, aged 75.

Adam Orr, M.D. Queen's College, Cork, Ireland, 1862; M.R.C.S., Edinburgh, 1864; died at his home in Allegheny, Pa., September 25, aged 66.

William Jasper Packwood, M.D. University of Buffalo, Medical Department, 1876, died suddenly at his home in Buffalo, September 24, aged 54.

Oscar Alfred Fliesburg, M.D. College of Physicians and Surgeons, Chicago, 1885, died at his home in Minneapolis, Minn., September 12, aged 55.

George W. Davies, M.D. College of Physicians and Surgeons of Chicago, 1895, was found dead at his home in Waterloo, Wis., September 22.

Chauncey B. Howe, M.D. Syracuse (N. Y.) Medical College, 1861, of Seneca Falls, N. Y., died in the Geneva Hospital, August 27, aged 80.

Harvey Dunn, M.D. St. Louis Medical College, 1867, died at his home in Perry, Ill., September 11, after an illness of several years, aged 72.

Eva M. L. Scobell, M.D. Hering Medical College and Hospital, Chicago, 1899, died at her home in Chicago, September 11, aged 33.

J. J. Wilkinson, M.D. Philadelphia University of Medicine and Surgery, 1868, died at his home in Orland, Ind., September 6, aged 64.

Charles W. Pfeffer, M.D. Baltimore Medical College, 1883, died at his home in Baltimore, September 22, after a lingering illness.

William F. Wallace, M.D. Columbus (Ohio) Medical College, 1880, died at his home in Rochester, N. H., recently.

Deaths Abroad.

Hermann Cohn, M.D., the well-known ophthalmologist and hygienist, died at Breslau, September 14, aged 68. He began his scientific career with physics and chemistry, and then devoted himself to medicine, presenting theses in each of these branches of science. Since 1866 he has confined his efforts to ophthalmology and hygiene, and has won fame and honors in both. He has published more than 200 articles on subjects in these lines, besides a number of manuals and compilations of statistics, etc. His first important work was his famous study of the condition of the eyes of 10,060 school children, with suggestions for the hygiene of the eyes during school life. This was followed by "The School of the Future," "Tests for Vision," "How Can the School Combat Masturbation Among the Children"? etc. One of his latest communications proclaimed the efficacy of radium in treatment of trachoma.

O. Vierordt, M.D., professor of internal medicine and pediatrics at Heidelberg, died September 2, aged 50. He was stricken with cardiac paralysis while greeting the members of the German medical study trip as they were visiting his clinic on their rounds through Heidelberg.

W. Czermak, M.D., professor of ophthalmology at Prague, died September 8, aged 50. He has published numerous articles on his specialty, on the origin of glaucoma, corneal fistula, etc., besides a manual of ophthalmology and guide to operations on the eyes.

G. A. Morache, M.D., professor of legal medicine at Bordeaux, died recently, aged 69. He was sent by the French government to China and elsewhere on several special medical missions.

A. Högyes, M.D., director of the Pasteur Institute at Budapest, formerly professor of internal medicine, died September 7.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

INFORMATION WANTED REGARDING PUBLIC CARE AND TREATMENT OF INSANE.

SALINA, KAN., Sept. 24, 1906.

To the Editor:—I am looking for a book or publication which will give me some practical information regarding public care and treatment of our unfortunates. Will you kindly help me toward this end?

O. D. WALKER, M.D.

COUNTER-IRRITANTS IN PNEUMONIA.

WARSAW, VA., Sept. 12, 1906.

To the Editor:—1. When are the following counter-irritants indicated in pneumonia: (a) Blisters in lobar pneumonia? (b) Mustard plasters, poultices or paste in bronchopneumonia?

2. Will statistics show a lower percentage of mortality or shorter duration of disease by their use? L.

ANSWER.—1. The question of the use of counter-irritants in pneumonia is one on which opinions differ widely. By many, the use of these remedial agents is regarded as entirely useless; others believe that particularly at the beginning of pneumonia, when there is severe pain, not only is relief from pain obtained by these local applications, but that in some way the course of the disease is modified. That pain may be relieved by the use of hot applications, poultices, plasters and blisters, we think can not be doubted. That lobar pneumonia or bronchopneumonia are modified in their course by such applications is not believed by clinicians generally; and often more harm than good is done by the pain and annoyance from the applications, from the mechanical interference with respiration caused by heavy poultices or plasters, and by alternate heating and chilling of the body due to poultices becoming cold. We know of no special indication for the use of these applications in broncho-pneumonia.

2. No.

TREATMENT OF "CANKER SORES."

LORAINE, ILL., Sept. 19, 1906.

To the Editor:—Will you kindly publish in THE JOURNAL a good treatment for canker sores of the mouth? X. Z.

ANSWER.—The expression "canker sores of the mouth" may cover a multitude of sins, from a dirty, sour nursing bottle causing sore mouth in an infant, to the mucous patches of syphilis. Therefore, a knowledge of the cause is of the first importance in the treatment. The cause may be purely local, as when a burn produces vesiculation in the mouth, or it may be practically entirely constitutional, as in syphilis. In the usual case, as seen in infants and children, a combination of both conditions commonly exists, and the more obstinate the case the more influential the constitutional element. Of the local causes, sour and improper foods, with a lack of cleanliness of the mouth, play the most important rôle. Of the constitutional conditions, scurvy, ricketts, syphilis, the depressed state following the acute infectious diseases, etc., are the most important. The treatment, therefore, must be both local and general. The food should be pure and sweet and such as the child can properly digest. It should be given cool because warm drinks irritate the mouth more than cold ones. With a clean camel's hair brush or fresh cotton swab the spots may be touched gently but thoroughly with a solution of from 0.5 per cent. to 1 per cent. of permanganate of potassium or a solution of from 1 to 2 per cent. of nitrate of silver. If the pain is so severe that the child can not be made to take any nourishment the sore spots may be carefully touched with a 2 per cent. solution of cocain, which will deaden the pain for the time being so that the child will nurse. This, of course, should only be used by the physician himself or by a perfectly competent trained nurse under his direction. A diet suitable to the age and condition of the child, at times with tonics, should be prescribed for the general condition. Syphilis, of course, requires its own specific treatment.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending September 29, 1906:

Kirby-Smith, R. M., asst.-surgeon, left Army General Hospital, Presidio of San Francisco, on 30 days' sick leave of absence, with permission to apply for two months' extension.

Hoff, John Van R., asst.-surgeon-general, relieved from duty as chief surgeon, Dept. of the Missouri, and will proceed to San Francisco, and take transport to sail Nov. 5, 1906, for the Philippine Islands, and on arrival at Manila will report in person to the commanding general, Philippines Division, for assignment to duty.

Girard, Joseph B., asst.-surgeon-general, relieved from duty as chief surgeon, Philippines Division, and will proceed to San Francisco, on transport sailing from Manila in December, 1906, reporting on arrival in the United States to the Military Secretary of the Army for further orders.

Rhoads, Thomas L., asst.-surgeon, relieved from duty at U. S. Military Academy, West Point, N. Y., and ordered to Fort Crook, Neb., for duty.

Smith, Herbert M., asst.-surgeon, advanced to the rank of captain from Sept. 20, 1906.

Cox, Walter, asst.-surgeon, leave of absence extended two months.

Hoff, John Van R., asst.-surgeon-general, relieved from duty at camp of instruction at Fort Riley, Kan., and will return to his proper station at Omaha.

Barlett, C. J., asst.-surgeon, advanced to the rank of captain, from September 21.

Jones, Harold W., asst.-surgeon, will accompany 14th Cavalry from Sequoia and the General Grant national parks, to Presidio of Monterey, Cal., and report, on arrival, for temporary duty. Also to report by letter to commanding general of the department for further orders.

Carter, Wm. F., surgeon, granted leave of absence for one month, to take effect about October 6, with permission to apply for one month's extension.

Davis, Wm. B., deputy surgeon general, left Headquarters, Department of the Lakes, Chicago, on 21 days' leave of absence.

Ford, Clyde S., asst.-surgeon, will repair from New York City to Washington, D. C., and report in person to the Military Secretary of the Army for instruction in the matter of personal identification record.

Koerper, C. E., asst.-surgeon, granted thirty days' leave of absence.

Lynch, Charles, surgeon, general staff, leave of absence extended fifteen days.

Love, Albert G., asst.-surgeon, will accompany troops from Yosemite National Park to Presidio of San Francisco, on arrival at the latter post to report for temporary duty, also report in person to the commanding general, Department of California, for further orders.

Wakeman, Wm. J., surgeon, left Fort Thomas, Ky., on thirty days' sick leave of absence.

Wadhams, S. H., asst.-surgeon, will accompany Companies B and D, 4th Infantry from Fort Slocum, N. Y., to Fort Mackenzie, Wyo., instead of First Lieut. James D. Fife, asst.-surgeon, previously assigned to this duty.

Morris, Samuel J., asst.-surgeon, ordered to proceed from Fort Schuyler, N. Y., to New York City, and report in person to commanding officer, U. S. Army Transport *Sumner* for duty as transport surgeon.

Shellenberger, James E., contract surgeon, granted an extension of two months to his sick leave of absence.

Hutson, T. Ogier, contract surgeon, returned to Fort McPherson, Ga., from temporary duty at Fort Moultrie, S. C.

Hereford, John R., contract surgeon, ordered from Fort Caswell, N. C., to Fort Screven, Ga., for temporary duty.

Hasseltine, Hermon E., contract surgeon, ordered from Bristol, Vt., to Fort Thomas, Ky., for duty.

Myers, William H., contract surgeon, relieved from duty at Washington Barracks, D. C., and ordered to the Army Medical School for a course of instruction.

Johnson, Howard H., contract surgeon, relieved from duty at the Army General Hospital, Washington Barracks, D. C., and ordered to the Army Medical School for a course of instruction.

Macy, Fred S., contract surgeon, relieved from duty at Fort Adams, R. I., and ordered to the Army Medical School, Washington, D. C., for a course of instruction.

The following contract surgeons have been ordered from the places designated to Washington, D. C., for a course of insrruction at the Army Medical School: Rukke, Guy V., Ann Arbor, Mich.; Bryan, Ray W., St. Louis; Pillsbury, Henry C., Boston; Christie, Arthur C., Clymer, N. Y.; Gostin, Bernard S., Macon, Ga.; Bartlett, William K., Minneapolis, and King, Edgar, Van Buren, Ark.

Hogan, David D., contract surgeon, relieved from duty at Fort Hamilton, N. Y., and temporary duty at Fort Jay, N. Y., and ordered to Fort Schuyler, N. Y., for duty.

Stone, Frank P., dental surgeon, returned to duty at Fort Sam Houston, Texas, from leave of absence.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending September 29, 1906:

Bell, W. H., surgeon, to special duty in the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

De Bruler, J. P., asst.-surgeon, detached Navy Yard, Washington, D. C., etc.: to special duty in the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

Benton, F. L., surgeon, detached Naval Hospital, Navy Yard, Pensacola, Fla., to the *Texas*.

Langhorne, C. D., surgeon, to the *Brooklyn*.

Freeman, G. F., P. A. surgeon, to duty Naval Hospital, Portsmouth, N. H.

Webb, U. R., P. A. surgeon, detached Naval Hospital, Portsmouth, N. H., to the *Brooklyn*.

Backus, J. W., P. A. surgeon, detached U.S.R.S. *Franklin*, Navy Yard, Norfolk, Va., to the *Texas*.

Moore, A. M., surgeon, retired, to Navy Recruiting Station, Memphis, Tenn.

Page, J. E., surgeon, to Naval Hospital, Norfolk, Va.

Tolfree, H. M., P. A. surgeon, detached Naval Hospital, Norfolk, Va., to the *Connecticut*.

Taylor, E. C., asst.-surgeon, detached U.S.R.S. *Hancock*, Navy Yard, New York, N. Y., to duty Naval Hospital, New York.

Rennie, W. H., asst.-surgeon, detached U.S.R.S. *Lancaster*, Navy Yard, League Island, Pa., to duty Naval Hospital, Pensacola, Fla.

Lovering, P. A., medical inspector, detached from duty as member of Naval Medical Examining Board, to duty in command of Naval Hospital, Norfolk, Va.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissoned officers of the Public Health and Marine-Hospital Service for the seven days ending Sept. 26, 1906:

Gassaway, J. H., surgeon, granted leave of absence for three days.

White, J. H., surgeon, granted leave of absence for seven days from Sept. 23, 1906.

Guiteras, C. M., surgeon, granted leave of absence for one day.

Wertenbaker, C. P., surgeon, granted extension of leave of absence for seven days from Sept. 22, 1906.

Stimpson, W. C., surgeon, granted leave of absence for two days from Sept. 21, 1906.

Lavinder, C. H., P. A. surgeon, relieved from temporary duty at Detroit and directed to proceed to Stapleton, N. Y., reporting to the Medical Officer in Command for duty and assignment to quarters.

Grubbs, S. B., P. A. surgeon, granted leave of absence for two days.

Hobdy, W. C., P. A. surgeon, detailed to represent the Service at the semiannual meeting of the California Public Health Association at San Jose, Cal., Oct. 10, 1906.

Ward, W. K., asst.-surgeon, granted leave of absence for seven days from Sept. 24, 1906, under the provisions of Paragraph 191 of the Regulations.

Gibson, L. P., acting asst.-surgeon, granted leave of absence for five days.

James, W. F., acting asst.-surgeon, leave of absence granted without pay to Acting Assistant Surgeon James for fifteen days from August 31, 1906, revoked.

Scott, E. B., pharmacist, granted leave of absence for twenty-three days from Aug. 23, 1906, on account of sickness.

Scott, E. B., pharmacist, granted leave of absence for twenty-four days from Sept. 20, 1906.

Slough, Charles, pharmacist, relieved from duty at Honolulu, T. H., and directed to proceed to San Francisco, reporting to the Medical Officer in Command for duty and assignment to quarters.

Beck, J. E., pharmacist, relieved from duty at San Francisco, and directed to proceed to Honolulu, T. H., reporting to Chief Quarantine Officer for duty and assignment to quarters.

Iltis, George W., pharmacist, granted leave of absence for thirty days from Sept. 22, 1906.

Hall, L. P., pharmacist, granted leave of absence for seven days from Sept. 23, 1906, under Paragraph 210 of the Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the year ended September 28, 1906:

SMALLPOX—UNITED STATES.

Indiana: South Bend, Sept. 16-22, 1 case.
Kentucky: Lexington, Sept. 8-15, 1 case.
Louisiana: New Orleans, Sept. 8-15, 7 cases (6 imported).
Ohio: Cincinnati, Sept. 14-21, 1 case.
Pennsylvania: Altoona, Sept. 15-22, 1 case, 1 death.

SMALLPOX—FOREIGN.

Africa: Cape Town, Aug. 4-18, 8 cases.

Brazil: Bahia, Aug. 11-18, 6 cases; Pernambuco, Aug. 1-15, 3 deaths; Rio de Janeiro, Aug. 12-Sept. 2, 10 cases.

Chile: Antofagasta, July 29-Aug. 12, 39 cases, 4 deaths; Coquimbo, 30 cases, 1 death; Talcahuana, present.

India: Bombay, Aug. 14-28, 4 deaths; Calcutta, Aug. 4-11, 2 deaths; Karachi, Aug. 12-26, 5 cases, 2 deaths; Madras, Aug. 4-17, 3 deaths.

Russia: Moscow, Aug. 18-25, 2 cases; Odessa, Aug. 25-Sept. 1, 6 cases; St. Petersburg, Aug. 18-25, 2 cases, 1 death.

Siberia: Vladivostok, July 28-Aug. 4, 1 case.

Spain: Barcelona, Sept. 1-10, 8 deaths; Seville, Aug. 1-31, 31 deaths.

Turkey: Constantinople, Aug. 26-Sept. 9, 2 deaths.

YELLOW FEVER.

Cuba: Habana, Sept. 27, 2 cases.

Ecuador: Guayaquil, Aug. 1-31, 9 deaths.

Mexico: Merida, Sept. 2-15, 5 cases, 4 deaths; Tuxtepec, 4 cases, 5 deaths; Vera Cruz, 2 cases, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, July 28-Aug. 4, 38 cases, 30 deaths; Provinces, July 28-Aug. 4, 731 cases, 534 deaths.

CHOLERA—FOREIGN.

India: Bombay, Aug. 14-28, 89 deaths; Calcutta, Aug. 4-17, 8 deaths; Madras, 19 deaths; Rangoon, Aug. 11-18, 1 death.

PLAGUE—INSULAR.

Hawaii: Honolulu, Aug. 18-25, 1 case, 1 death.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Aug. 12-Sept. 2, 8 cases, 4 deaths; Pernambuco, Aug. 1-15, 2 deaths.

Egypt: Alexandria, Aug. 28-29, 2 cases, 4 deaths; Suez, Aug. 24-25, 2 deaths.

India: General, July 28-Aug. 11, 2,321 cases, 167 deaths; Bombay, Aug. 14-28, 61 deaths; Calcutta, Aug. 4-11, 2 deaths; Karachi, Aug. 12-26, 10 cases, 8 deaths; Rangoon Aug. 4-18, 205 deaths.

Japan: Formosa, Aug. 10-20, 3 cases, 3 deaths.

Peru: Lima, Aug. 18-25, 7 cases, 4 deaths; Mollendo, 1 case, 1 death; Paita, 3 cases, 2 deaths.

State Boards of Registration

COMING EXAMINATIONS.

GEORGIA Board of Medical Examiners (Regular), Capitol, Atlanta, October 9. Secretary, E. R. Anthony, Griffin.

ARKANSAS State Medical Examining Board, Little Rock, October 9. Secretary, J. P. Runyan, Little Rock.

KANSAS State Board of Medical Registration and Examination, State House, Topeka, October 9. Secretary, F. P. Hatfield, Grenola.

MICHIGAN State Board of Registration in Medicine, Lansing, October 9. Secretary, B. D. Harison, Detroit.

MISSISSIPPI State Board of Health, The Capitol, October 9. Secretary, J. F. Hunter, Jackson.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, October 11. Secretary, Geo. C. Ober, Washington.

NEW JERSEY State Board of Medical Examiners, Trenton, October 16-17. Secretary, J. W. Bennett, Long Branch.

TEXAS State Board of Medical Examiners, Houston, October 16-18. Secretary, T. T. Jackson, San Antonio.

FLORIDA Board of Medical Examiners (Regular), Jacksonville, October 17-18. Secretary, J. D. Fernandez, Jacksonville.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, October 17-19. Secretary, J. A. Egan, Springfield.

LOUISIANA State Board of Medical Examiners, New Orleans, October 19-20. Secretary, F. A. Larue, New Orleans.

KENTUCKY State Board of Health, Louisville, October 23. Secretary, J. N. McCormack, Bowling Green.

INDIANA Board of Medical Registration and Examination, Indianapolis, October 23-25. Secretary, W. T. Gott, Indianapolis.

Nebraska May Report.—Dr. George H. Brash, secretary of the Nebraska State Board of Health, reports the written examination, held at Lincoln, May 29-30, 1906. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 49, of whom 36 passed and 13 failed. Twenty-eight reciprocal licenses were granted. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Bennett College, Eclec. Med. and Surg., Chicago	(1906)	87.2
Central Med. Coll., St. Joseph	(1905)	78.3
American Med. Coll., St. Louis	(1906)	79.3
St. Louis University (Marion-Sims-Beaumont Med. Coll.)	(1896)	78.5.
Lincoln Med. Coll.	(1906)	75.1, 77.8, 81.7, 84.7
University of Nebraska	(1906)	81, 83.8, 84, 85.2, 92.2, 94.2
Creighton Med. Coll.	(1905)	77.6;
	(1906)	76.2, 76.3, 76.4, 76.5, 76.7, 79, 79.7, 80.1, 80.2, 80.5, 80.6, 80.7, 82.2, 82.5, 83, 84, 85.6, 85.6, 85.7, 86.2, 89.5.

FAILED.

College.	Year Grad.	Per Cent.
Central Med. Coll.	(1905)	46.8, 74.3
Creighton Med. Coll.	(1905)	72;
	(1906)	57.7, 63.7, 70.3, 71.1, 72.2, 72.6, 73.8.
University of Nebraska	(1905)	50.5, 62.1, 70.5

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
Northwestern University	(1893), (1905)	Illinois
Hahnemann Med. Coll., Chicago	(1878), (1897)	Iowa
Hahnemann Med. Coll., Chicago	(1904)	Illinois
Chicago Homeopathic Med. Coll.	(1889)	Iowa
Rush Med. Coll.	(1904)	Illinois
Bennett Coll. Eclec. Med. and Surg., Chicago	(2, 1906)	Illinois
Jenner Med. Coll., Chicago	(1904)	Illinois
American Coll. of Med. and Surg.	(1906)	Illinois
Hering Med. Coll.	(1906)	Illinois
Illinois Med. Coll.	(1905)	Illinois
University of Iowa	(1905)	Iowa
Sioux City Coll. of Med.	(1905)	Iowa
College of P. and S., Baltimore	(1881)	Iowa
Barnes Med. Coll.	(1906)	Illinois
Ensworth Central Med. Coll.	(1906)	Kansas
Creighton Med. Coll.	(1900), (1902)	Iowa
Lincoln Med. Coll.	(3, 1906)	Kansas
Cincinnati Coll. of Med. and Surg.	(1877)	Iowa
Omaha Med. Coll.	(1902)	Iowa
University of Pennsylvania	(1893)	Iowa
Meharry Med. Coll.	(1895)	Kentucky
Trinity University, Toronto	(1902)	Michigan

Michigan June Report.—Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examination, held at Ann Arbor. June 12-14, 1906. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 71, of whom 68 passed and 3 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Howard University	(1905)	81.3
American Med. Miss. Coll	(1906)	85.4
University of Michigan,	(1889)	88.8;
	(1904)	84.5, 87;
	(1905)	85, 87.7, 90.7;
	(1906)	82.5, 84.3, 86.3, 87, 87.6, 88, 88.1, 88.2, 88.4, 88.4, 88.6, 88.6, 88.8, 89.3, 89.4, 89.6, 89.6, 89.8, 89.9, 89.9, 89.9, 90.3, 90.4, 90.5, 90.7, 91.3, 91.8, 92.2, 92.2, 92.3, 92.3, 93, 93.1, 95, 97.
University of Michigan, Homeo. Dept.	(1906)	79.7, 81.9, 83, 84.5, 84.7, 86.9, 86.9, 87.1, 87.3, 88.5, 89, 90.2.
Grand Rapids Med. Coll.	(1906)	76.3, 90.3, 93.2
Saginaw Valley Med. Coll.	(1901)	84.1
Detroit Coll. of Med.	(1903)	81.4
University of Missouri	(.1906)	88.7
Dartmouth Med. Coll.	(1906)	84.6
New York Homeo. Med. Coll.	(1906)	83.8
Miami Med. Coll.	(1895)	75.2
Jefferson Med. Coll.	(1906)	87.3
Trinity Med. Coll., Toronto	(1904)	94.5;
	(1901)	77.2
Royal University, Turin, Italy	(1901)	79.5

FAILED.

College.	Year Grad.	Per Cent.
Chicago Med. Coll.*	(1872)	65.6
Meharry Med. Coll.	(1905)	72.5
McGill University, Montreal	(1897)	71.8

* Now the Northwestern University Medical School.

Society Proceedings

COMING MEETINGS.

Colorado State Medical Society, Denver, Denver, Oct. 9-11.
Delaware State Medical Society, Wilmington, Oct. 9.
Medical Society of Virginia, Charlottesville, Oct. 9-11.
Kentucky State Medical Association, Owensboro, Oct. 10-12.
Vermont State Medical Society, Barre, Oct. 11-12.
American Association of Railway Surgeons, Chicago, Oct. 17-19.
Mississippi Valley Medical Association, Hot Springs, Ark., Nov. 7-8.
Southern Surg. and Gyn. Assn., Baltimore, Dec. 11-13.
American Public Health Assn., Mexico City, Dec. 3-7.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Nineteenth Annual Meeting, held at Cincinnati, Sept. 20-22, 1906.

(Continued from page 1045.)

Peritoneal Adhesions.

DR. ROBERT T. MORRIS, New York City, mentioned as favorite fields for chronic peritoneal adhesions the region of the cecum and appendix, the gall bladder, the sigmoid region, and pelvis. The greatest amount of disturbance calling for attention on the part of the surgeon comes from the region of the gall bladder, because the organs in this region are more movable than those elsewhere, such as the liver and diaphragm, which move with every inspiration and pull on the adhesions and the stomach, which is moving constantly. Next in the order of importance is the group of adhesions in the region of the cecum and appendix. Adhesions in the pelvic region, which, although extremely common, do not call for so much interference on the part of the surgeon as do the other groups of adhesions, for the reason that the viscera involved rest on the pelvic floor, and are subject to such constant and varying degrees of friction. Adhesions about the sigmoid give rise to comparatively little disturbance.

As to treatment. there are certain instances that do not call for much surgical attention. In these cases the minor psychoses should be ruled out. As to the method of treating these cases. he first began by simply separating them. He tried rubbing them with oil for a while, without getting marked results; then he followed the plan of filling the peritoneal cavity with saline solution after operation. But this was not wholly satisfactorily, because the salt solution is absorbed too rapidly.

He then adopted the method of using the aristol film, because he noticed that when raw peritoneal surfaces are exposed to the air there is a tendency for a lymph coagulum to form. An insoluble material like aristol offers a mechanical obstacle to readhesion at that point. The tri-iodid of thymol offers the best mechanical protection. It makes a smooth coagulum with the lymph and remains for a long time. In rabbits it was still present after a year. The Cargile membrane prevents the recurrence of adhesions very regularly, although not completely sometimes. Sometimes the surgeon may have to repeat the operation. Dr. Morris expressed himself as unwilling to state which is the better of the two, the Cargile membrane or the aristol film. Both are distinctly valuable in their proper places.

Porro Cesarean Section for Pregnancy, with Complicating Fibroids.

Dr. James F. Baldwin, of Columbus, Ohio, said statistics show that in cases of pregnancy complicated with fibroids, unless the latter are so small as to be negligible, a maternal mortality of over 30 per cent., and a fetal mortality of probably 50 per cent.. is obtained. Porro Cesarean section, with proper surroundings and competent operator, should give a maternal mortality of only about 5 per cent.. and practically no fetal mortality whatever. Hence this operation should be uniformly advised in this class of cases.

Uterine Fibroids Complicating Pregnancy.

Dr. Marcus Rosenwasser, of Cleveland, Ohio, said the recent report of cases of uterine fibroids obstructing delivery, in which the lives of mother and child were seriously endangered in the effort to deliver by the natural channel, justified operators in reporting the cases relieved by Cesarean section for the purpose of establishing the latter as a safer and better method of saving both lives. The report of a Porro Cesarean section successfully terminated was made as an additional contribution to papers previously read before the association and published in its transactions of 1896 and 1899. In this case the pelvis was obstructed by an immovable subperitoneal fibroid located in the posterior wall of the lower uterine segment. The operation had been planned for the onset of labor at term, but owing to rupture of membranes and prolapse of cord, became an emergency operation at the beginning of the ninth month. Mother and child were saved.

DISCUSSION.

Dr. E. Gustav Zinke, Cincinnati, Ohio, delivered two women in whom tumor was discovered after delivery. The tumors were intramural, very small, one the size of a walnut, the other the size of a hen's egg. The first case he saw was one of interstitial fibroids which implicated the intrauterine wall. It had been in the hands of a midwife, and when she failed to deliver the woman a physician was called in to assist. This was twelve years ago. As it was impossible to effect delivery in the usual manner, Dr. Zinke was called in and did a Cesarean section. The fetus had been dead for some time, and the woman died within forty-eight hours of sepsis. Where pregnancy is far advanced and a fibroid tumor is recognized, it is an extreme source of danger to the woman, especially if the tumor is subperitoneal. He thinks Cesarean section gave the woman as well as the child the best chance for their lives.

Dr. Oscar H. Elbrecht, St. Louis, Mo., mentioned a case of fibroid tumor complicating pregnancy at the fourth month. It was subperitoneal, and situated in the anterior uterine wall. He removed the tumor, and the woman went on to full term.

Dr. Robert T. Morris, New York, operated for the removal of a subperitoneal fibroid at the fifth month of pregnancy in a patient who was having a miscarriage. He operated with a desperate chance of trying to save the child. The patient was nearly 50 years of age, her only pregnancy, and a great deal depended on the birth of the child in the family. The labor pains ceased after he had removed a fibroid about as large as his fist; she went on to full term and was delivered of a living child.

Dr. Edward J. Ill, of Newark, N. J., did not think that every woman who has fibroids ought to have the uterus removed or a Cesarean section done. The indication should be drawn closely. If there is obstruction in labor, then operation is indicated. He has only once done a Cesarean section for fibroids.

Dr. Joseph Price, of Philadelphia, said that these cases, when recognized early, particularly cases of pedunculated fibroids, if they fall into the hands of skilful operators, can be operated on and the fibroids removed, the patients going on to term, and without premature deliveries or abortions.

Dr. Frederick Blume, of Pittsburg, cited a case in which he did a supravaginal hysterectomy for a fibroid tumor complicating pregnancy. He mentioned one case in which there was a tumor an inch above the umbilicus, fluctuating, the size of a three months' pregnancy, and simulating an ovarian cyst. He operated and found that it was the uterus, seven months advanced in pregnancy, and the other was a fibroid tumor projecting into the pelvis. He sewed up the wound and subsequently delivered her of a nine-pound child, but took the liberty of removing the uterus, as she was 45 years of age. It was a breech presentation. The child was dead. The woman, however, got along very well. This case shows that fibroid tumors do not disappear after delivery. In this case the tumor grew in six months to such an extent that it became necessary to do a supravaginal hysterectomy. He does not advocate that any woman who has a fibroid complicating pregnancy should undergo a Cesarean section.

Dr. Hugo O. Pantzer, of Indianapolis, cited a number of cases of fibroid tumors complicating pregnancy. He was called to see the first ten days after the woman had given birth to a child. She had developed fever, and at this time was passing a fibroid which had become gangrenous. In a second instance he was called to deliver a woman who had been in labor forty-eight hours. A large tumor was found located at the fundus, and within four days this tumor sloughed away. In the first case the sloughing fibroid was removed with forceps; the patient made a good recovery, and has since again become pregnant. In the second case the tumor gave evidence of sloughing on the third day after delivery, and within twenty-four hours he operated per vaginam, removed the fibroid, and the woman made a good recovery.

Dr. J. Henry Carstens, of Detroit, Mich., said that if a small fibroid is found in the cervix which causes symptoms, it can be removed per vaginam when the woman is pregnant, which will save her a severe labor. If the fibroid is a large one and situated higher up, and there is likelihood of its interference with labor, the tumor should be removed whether the woman is three or six months pregnant, thus saving her future trouble. If the uterus contains multiple fibroids and there is good reason to suspect considerable trouble on account of their interference with pregnancy, it is well to do either an abdominal or supravaginal hysterectomy, according to the nature of the case. If a Cesarean section is required and there is a very large fibroid to deal with, the fibroid should be removed and the uterus saved.

Abdominal Section for Trauma of Uterus.

Dr. Charles E. Congdon, of Buffalo, N. Y., related a case in which there was puncture of the non-puerperal uterus, with prolapse of the bowel; violent seizure and tearing away of sixteen inches of gut. Abdominal section, with intestinal anastomosis, was resorted to promptly, and the uterine laceration repaired and followed by recovery of the patient.

DISCUSSION.

Dr. Edwin Walker, of Evansville, Ind., reported a case of rupture of the uterus with prolapse of the intestine. The woman had aborted at about the fourth month, and he was called to deliver the placenta. He used the uterine auger, with which he brought away the placenta, and before he realized it he had quite a large mass, which he found to be the intestine. A handful of intestine was presenting at the vulva. Dr. Walker replaced it in the vagina, applied a tight binder, removed the woman to a hospital, opened the abdomen, and found that thirty-one inches, with mesentery, were torn away. He resected the intestine, used a Murphy button, did not employ any sutures in the uterus, as the parts fell together so well, then closed the abdomen, and the patient made a good recovery. He also mentioned a case in which the uterus was punctured during a curettement.

Dr. Rufus B. Hall, of Cincinnati, believes that perforation of the uterus is more frequent than most men are willing to admit, especially in producing abortion. He does not believe that prolapse of the intestine is frequent in perforation of the uterus. He had an experience a few years ago that impressed on his mind forcibly that these cases run in groups. Within eight days he had five patients with perforated uteri who had produced abortions on themselves. These patients were suffering with various stages of infection. All of them were treated, when there was pus present, with vaginal section, and the pus emptied. Three patients recovered and two died.

DR. JAMES F. BALDWIN, of Columbus, related a case of punctured uterus, the result of an attempted abortion. There was an enormous amount of pus discharged through the vagina, and the woman promptly recovered.

DR. WALTER B. DORSETT, of St. Louis, Mo., said the cases of rupture or perforation of the uterus should be classified. If asked to attend a case in which there was perforation of the uterus, produced by an abortionist, he would not hesitate to operate. He has operated on three such cases, cleaning out the pus which was present, and putting in vaginal drainage. He recalled one case of rupture of the uterus in labor in which nothing was done. The intestine was pushed back and the woman made a very good recovery.

DR. JOHN YOUNG BROWN, of St. Louis, said that in spite of the teachings of military surgeons, civil surgeons were beginning to realize the importance of penetrating wounds of the abdomen. It did not matter whether the penetration was caused by the curette, bullet, or by stab wound, the consensus of opinion among civil surgeons is that all such wounds should be explored.

(To be continued.)

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

Fifteenth Annual Meeting, held in Buffalo, N. Y., Sept. 11-14, 1906.)

(Concluded from page 1047.)

Technic of the Yellow-Fever Campaign.

ASSISTANT SURGEON WILLIAM C. RUCKER, U.S.P.H.&M.-H. Service, who was on duty in New Orleans last year during the yellow-fever epidemic and conducted a campaign against the disease in that place which was successful, although in his labors he contracted the yellow fever himself, described in detail the methods for suppression of an epidemic of yellow fever, which are based entirely on the mosquito dogma.

The three basic principles are that yellow fever is transmitted only by the *Stegomyia calopus* and not *Stegomyia fasciatiæ*, as has been commonly believed; that this mosquito is infected only by biting a yellow-fever patient during the first three days of the disease, and that the mosquito can not transmit the infection until a period of from 12 to 20 days (usually 14) has elapsed. The fundamental object, therefore, of such a campaign is to prevent the breeding of the stegomyia, to locate and to isolate all persons with yellow fever or with suspicious fever as early as possible in the disease to prevent the stegomyia from biting them and thereby becoming infected, and finally to destroy all infected stegomyia.

Stegomyia calopus is a domestic mosquito that breeds around human habitations. Cisterns, rain barrels or places where there is fresh, clean water are the preferred breeding places. In default of such places, however, it may deposit its eggs in foul or stagnant water. The mosquito is sly and persistent in its attacks on the human subject. It bites preferably just above the shoe tops. Only the female bites. The young mosquitoes bite only in daytime, but the adults bite in a darkened room or at night.

Dr. Rucker described in detail the supplies necessary for the attacks on stegomyia in its breeding places, the materials necessary for screening, etc., and the technic of this procedure. The location of those sick with fevers is not easy. The ignorant are prone to hide their sick in order that they may not be sent to the hospital or that their places of business may not be closed, while the better class act in a similar manner to avoid fumigation of their premises and notoriety. It is necessary, therefore, that the people of an infected city be kept under constant surveillance. The main support in all such cases must be the family physician. Cases should be reported early, as a patient is infective to mosquitoes only during the first three days of the disease. During this period the patient should be screened, or in other words, the mosquito should be protected from the patient. After screening the room, fumigation of the room and the surrounding premises is made. The officer should not treat nor offer advice regarding the treatment of patients. The axiom of the service is: "The patient belongs to his physician, the house belongs to the sanitary officer."

The sick are not isolated after the preliminary fumigation; they may receive visitors, but they are protected from mosquitoes. Funerals may be public. Business is not suspended, but places of public congregation are closed at night. Persons entering an infected town are obliged to give their names and city addresses to the division of train inspection. They are then inspected daily for five days. Persons leaving the city should be required to obtain health certificates from the sanitary bureau.

DISCUSSION.

DR. CHARLES P. WERTENBAKER, U.S.P.H.&M-H. Service, New York, said that every military surgeon may at some time be confronted by the problem of suppressing an outbreak of yellow fever, and he will then fully appreciate the detailed information such as has been furnished.

CAPT. S. C. STANTON, Ill.N.G., presented a resolution that copies of Dr. Rucker's paper be sent to the surgeons general of the various services, recommending that the article be distributed as a governmental publication, and that a copy of the resolution be forwarded to the surgeon general U.S.P.H.& M.-H.S. The resolution was unanimously adopted.

Economical Consumptive Sanatoria.

SURGEON PAUL M. CARRINGTON, U.S.P.H.&M.-H. Service, suggested an economical plan for consumptive sanatoria, with description of a new tent house, proposed by himself and tl architect, J. Ross Thomas, of the same service, which was rea in the absence of the authors by Dr. Rucker. The author appreciated the tendency in the past toward constructing ex pensive sanatoria, with costly systems of heating and ventilating, and appreciated also, incidentally, the liability of legislative bodies to make niggardly appropriations for such purposes. For this reason they have evolved a scheme for tent houses, inexpensively constructed, whereby the patient may have sunshine or shadow at any time of day, inside or outside of his room. Each tent is 12 by 14 feet in area, and is intended to house two persons. The ceiling is 9 feet high, and the sides are closed for half that distance. The heat is furnished by a small iron stove. The colony of tent houses has, of course, its administrative building, mess hall, etc., and the authors claim for the scheme, which is now in operation at Fort Stanton, N. M., the advantages of convenience of grouping, flexibility, isolation and economy.

Sanitary Questions in the Navy.

MEDICAL DIRECTOR MANLY H. SIMMONS, U.S.N., in his paper, entitled "The Medical and Sanitary Questions Met in Everday Life on a Cruising Ship in the Navy," pointed out the difference between the soldiers of the old Navy and the new, the great divergence in the duties from the old days, when the sailors were needed to handle sails, and the present time, when machinery is in use for practically all purposes. He spoke of the great difficulty in keeping modern ships in clean and sanitary condition, on account of the complexity of construction, and mentioned the changes desirable from a sanitary point of view, and the manner in which the various emergencies aboard the modern cruising ship have been met.

Resuscitation of Persons Apparently Drowned.

ASSISTANT SURGEON JOHN W. TRASK, U.S.P.H.&M.-H. Service, prepared a paper, read by Dr. Rucker, reporting two cases of prolonged submergence under water in which the patients, after 23 and 30 minutes' submergence, respectively, were resuscitated by continuation of artificial respiration for nearly two hours. From these cases the author urges the practice of persistence in artificial respiration for at least two hours, in all cases of the apparently drowned before hope is abandoned, especially when the known submersion has been less than 30 minutes or when the time of the submersion is in doubt.

Portable Rations for Soldiers.

MAJOR LOUIS LIVINGSTON SEAMAN, U.S.V.E., read a paper on "A Portable Ration for Soldiers in Battle and on the Field," which originally appeared in THE JOURNAL, May 26, 1906, page 1606, and to which he had added a number of observations suggested by his later experiences in Africa, concerning the advisability of an increase in the ration of sugar, and the sustaining properties of the raisin.

DISCUSSION.

Col. W. Grant McPherson, R.A.M.C., took exception to Dr. Seaman's remarks in regard to the absence of enteric disease in the Japanese army. In a recent conversation with a Japanese officer, said he, he had been informed that there were 27,000 cases of dysentery and typhoid fever during the Russo-Japanese war, with 4,000 deaths from enteric fever alone. He did not agree with the optimistic views of the author and objected to the diet suggested, for the reason that in summer it fermented and in winter it froze.

Dr. Harold D. Corbusier, Denver, spoke of the racial characteristics of the components of armies, which must be considered in the diet of all bodies of troops. An army should have a broad diet list on this account. He attached especial value to the use of bacon.

Major W. H. W. Ellicott, Indian Medical Service, gave his experience regarding the diet of troops, especially in the tropics. He considered smoked and jerked meats of great value.

Lieut.-Col. Nathan S. Jarvis, N.G.N.Y., agreed with the essayist in the necessity for sugar in the diet of the soldier, and spoke of his experience while in the United States service, when maple sugar and raisins proved especially valuable to the soldier in long marches over arid plains.

Dr. William C. Rucker, U.S.P.H.&M.-H. Service, stated his belief that diet was only the predisposing factor in the causation of beriberi, but had nothing to do with its causation.

Major Floyd S. Crego, N.G.N.Y., doubted the disappearance of beriberi, which the author claimed, and asserted that the acute symptoms disappeared, but that a modified form remained, which had its manifestation in the neuritis and psychoses, which are fast filling up our asylums, penitentiaries and almshouses.

Entertainment.

The entertainment provided for the association included a reception at the Lafayette Hotel on Tuesday evening, a luncheon given by Dr. Lucien Howe, on behalf of the Buffalo Academy of Medicine, at his residence on Wednesday noon; a reception at the Buffalo Club, of which Dr. Roswell Park is president, on Wednesday evening; an excursion on the United States revenue cutter *Morrill* down the Niagara River to Niagara Falls; a trolley excursion down the Canadian side, returning through the gorge, and a luncheon at Niagara Falls, N. Y. The ladies were given luncheons at the various country clubs, automobile rides, receptions, etc.

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

(Continued from page 1048.)

SECTION OF SURGERY.

In the introduction, **Sir Hector C. Cameron**, M.D., the chairman, acknowledged the great and daily increasing debt that surgery owes to those on the western side of the Atlantic, and looked forward with keen anticipation to the benefits to accrue from intercourse with the Canadian and American surgeons present.

Prostatectomy.

Dr. George A. Bingham, Toronto, in his introduction of the discussion on prostatectomy gave a description of the microscopic structure of the gland, showing that it lacks a true capsule and that definite lobes are absent. Embryologically, the prostate has been shown to be purely sexual in origin. The pathologic changes in hypertrophy were then taken up to show the relationship of the newly formed tissues to the remainder of the gland. If the modern prostatic enucleation is performed through the outer part of the gland, a portion of the prostate is left behind. In discussion of the treatment, he mentioned three classes of cases: The early cases, where the only symptom is obstruction. In these enucleation is advised with catheter life as an alternative; the very late cases, in which permanent drainage or Bottini's operation is advised; and the intermediate cases, in which enucleation should be performed. The author holds that neither the perineal nor the suprapubic operation meets all indications.

Ascites.

Mr. Sinclair White, F.R.C.S., Sheffield, in introducing the discussion on ascites, stated that ascitic effusion was largely passive and directly due to interference with the passage of blood through the hepatic terminals of the portal vein. Proliferation with subsequent contraction of the tissues forming the framework of the liver is the principal cause of obstruction. It may be supplemented by thrombosis of the portal vein and by defects in the general circulation. In cirrhosis of the liver about 50 per cent. of the cases progress to a fatal issue without ascites, and its absence is explained in these cases by the enlargement of the normal anastomotic vessels connecting the systemic and portal veins and by the development of new anastomoses in adhesions formed between the viscera drained by the portal vein and the abdominal walls. The value of drainage as an adjunct to operations is beyond dispute. Epiplopexy is contraindicated when any of the important viscera of the body are defective. It should in all cases be preceded by one or more tappings. Details of the operation vary, but omental fixation is the most important step. The pathologic changes in the liver are permanent and, therefore, incurable, but the ascitic phenomenon is capable of being arrested and the life of the patient prolonged by the operation.

Duodenal Ulcer.

Dr. William J. Mayo, Rochester, Minn., in his paper, entitled "Surgical Treatment of Ulcer of the Duodenum," declared that in all chronic ulcers of the stomach and duodenum 40 per cent. are situated in the duodenum alone or in connection with the stomach, and that 50 per cent. of all chronic indurated ulcers are also so situated. He then discussed ulcer and its surgical treatment. He thought that gastrojejunostomy has the largest field of usefulness, and excision may sometimes be resorted to.

Acute Septic Peritonitis.

Mr. Charles John Bond, F.R.C.S., Leicester, introduced the discussion on "Acute Septic Peritonitis." He spoke of the great importance of the diaphragmatic portion of the peritoneum and the peculiar sensitiveness of that portion which covers the small intestines. He described the way in which the peritoneum reacts to infection and the protection of the endothelial layer by the formation of a fibrinous deposit. Chemical peritonitis is not seen clinically. Peritonitis accompanying the intraperitoneal extravasation of blood is generally due to the *Staphylococcus albus*. Gonococcal peritonitis is not highly virulent. In ruptured gastric and duodenal ulcer the infection is not highly virulent, but the necessity for immediate operation is most urgent. The infection may frequently be arrested by irrigation, with or without drainage. Septic peritonitis is due to infection from the alimentary canal below the duodenum. The frequent and early migration into the peritoneum of the *Staphylococcus albus* in septic peritonitis, acts beneficially by stimulating the phagocytosis, and has an important bearing on treatment and the question of irrigation.

Peritonitis due to streptococcus infection is highly virulent and generally fatal. Pneumococcal peritonitis is frequent in female children and is present in primary and secondary varieties. The naked-eye observations, the character of the exudate and the appearance of the inflamed membrane are especially important in this variety of the disease. He next discussed the treatment by drugs, morphin and purgatives, by serum and spoke of the urgent need of a polyvalent anti-bacillus coli serum. In considering the surgical treatment, he dwelt especially on the importance of respecting the diaphragmatic area, and the risk of removing phagocytes by indiscriminate irrigation, and stated that the prime object is to attack the primary focus of invasion and arrest further infection.

The next point is the treatment of peritoneal cavity. In cases of moderate severity he considers the safest course to be the treatment of the primary focus by dry sponging or local irrigation and drainage, combined with the least amount of interference with the general cavity, unless collections of fluid exudate in the pelvis or loins require drainage. Highly virulent streptococcal infection may require free irrigation with even partial evisceration. The cases of slight virulence are treated best by free irrigation, either with or without subsequent drainage.

He concludes that irrigation is beneficial where the peritoneum contains foreign material, capable of removal by flushing, but that it is harmful in cases of fibrinous sticky exudate and when used to wash away a turbid exudate containing active phagocytes or when instrumental in spreading infection. Free drainage or tamponade is essential in the treatment of local abscesses, necrosis of the bowel, or when treatment of the primary focus of the invasion must be necessarily incomplete. It is generally harmful in the upper peritoneal area unless this is primarily infected. In the area of the small intestine it is of very little use. It is most frequently used in the lateral areas and in the pelvic basin. The efficiency of peritoneal drainage depends on the integrity of the endothelium in the area drained.

(To be continued.)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-sixth Annual Meeting, held in Bedford Springs, Sept. 10-13, 1906.

(Continued from page 1049.)

Treatment of Ulcer of the Cornea.

Dr. Edward Stieren, Pittsburg, does not believe that cauterization or stimulation of the ulcer should be thought of in the early stages of a corneal ulcer; and it is a question in his mind whether the employment of eserin or pilocarpin ever preserves an iris from prolapsing into a marginal ulcer, when it perforates and is accompanied with a sudden gush of the aqueous humor. He is also confident that too frequent cleansing of the eye has an untoward effect on the reconstructive process of this delicate structure. His plan of treatment is as follows: First, flushing liberally with saturated boric acid solution; second, filling the sac and keeping the lids covered with bichlorid of mercury ointment, in order to keep the sac as aseptic as possible; third, aiding the cornea in its recuperative process by atrophinizing the eyes, covering them with a cotton dressing, and keeping the patient in a moderately darkened room. Dionin dusted under the lower lid after the eye has been cleansed and before the bichlorid ointment has been used, causes the ulcer to heal more rapidly and renders the patient more comfortable. Indolent ulcers and those showing a tendency to spread are best treated with light applications of tincture of iodin. After using this agent the healed ulcer will show a scar less dense than when stronger chemical agents have been used. Dr. Stieren uses the cautery only in cases of corneal abscess. The liberation of pus caused by the cauterization relieves the excruciating pain usually present. Cases of ulceration of the cornea occurring in gonorrheal ophthalmia or in ophthalmia neonatorum demand especial attention. In such cases it is impossible to obtain even a moderate degree of cleanliness or asepsis of the conjunctival sac. The newer silver salts, although they may not be efficient bactericidal agents, are of value as protective and cleansing agents in gonorrheal ophthalmia. The opacities after their use are less dense than when strong cauterizing agents have been used.

Endogenous Infections.

Dr. Howard F. Hansell, Philadelphia, said that there are two groups of endogenous infections: intestinal intoxication and metabolic autointoxication. Endogenous ocular diseases are those which are caused by a poison created within the body in an organ other than the eye, and conveyed to the eye from the affected organ by means of the circulatory or lymphatic systems. They are distinct and separate diseases from those which involve the eye caused by germs or poisons acquired from sources without the body, or ectogenous diseases. A third class might be made of those which are partly ectogenous and possibly endogenous in causation. A distinction should also be made between autointoxication and metastasis. The former is a lesion induced in a distant organ by an agent created at the original site of the disease; the latter, a conveyance to a distant organ of one or more of the elements that made up the original disease. Endogenous infection of the eye usually starts in the uveal coat, either as a minute thrombosis or as a microscopic collection of bacteria. Next in frequency to the choroid is probably the retina, and finally the vitreous and the aqueous.

New Procedure for Treating a Prolapse of Iris.

Dr. Edward B. Heckel, Pittsburg, said that in a case with simple prolapse of the iris he renders the eye aseptic and instills eserin three times, at intervals of ten minutes. He then waits ten minutes, and then snips off the iris close to the cornea. He uses a horn spatula, shaved down to a millimeter in width, or thereabouts, depending on the size of the corneal wound. He introduces the spatula into the wound, with its long axis parallel to the long axis of the wound; then gives it a slight twist, being careful to allow the iris to withdraw itself gradually from the corneal wound. The lips of the wound will then come close together. A light pressure bandage is then applied. The action of eserin is continued, and the pupil is drawn back to its original position. A good result is secured. Sometimes Dr. Heckel has undertaken the procedure without the use of eserin. The results were sometimes good and sometimes not.

What Is the Safest Operation for Cataract?

Dr. Wendell Reber, Philadelphia, considers that operation the best which insures the greatest safety to the patient. He is convinced that preliminary iridectomy offers the greatest chance of success. So many patients and their family physicians oppose this method, however, that he has made an investigation of the views of the majority of the American operators. He sent circular letters to 160 of these, asking in what conditions they perform preliminary iridectomy, and whether they would do so in a patient who had already lost the sight of one eye. Dr. Reber thinks that one should b governed by the cause of the condition. Those who oppos preliminary iridectomy do so because the cosmetic effect i poorer; it produces more traumatism; the patient's vision i poorer afterward; it requires a longer time to perform; ther is more dazzling afterward; the vitreous is not so well r tained, and it is not justifiable to subject a patient twice t the risk of infection. The argument for extraction wit iridectomy is that it does not require so large an incision capsulotomy is more readily done; delivery of the lens easier; fewer secondary operations are necessary; iris prolap is rare; any glaucomic tendency during the healing may forestalled; there is less confinement to bed, and less hem rhage. The argument against two operations are that th is increased risk in opening the eye twice; one must through the scar tissue of the first operation; patients do care to go through a second operation; the chances of succ are no better with a preliminary operation entailing needl mutilation, and it wastes the patient's time. The author t gives a list of 14 arguments for preliminary iridectomy. Reber thinks that a procedure that facilitates not only diagnosis of cataract, but still more the most important p of the operation on it, seems to merit the preference to o methods. Extraction of cataract is never simpler, easie more durable than when performed on an eye in which iridectomy has been previously made.

Relation of Thyroid and Parathyroid Glands.

Dr. Allen J. Smith, Philadelphia, formulated the fol ing statements: 1. The parathyroids and thyroid glands structurally distinct and are not in any sense interconvert 2. There is probably some relation in their function, and of one seems to stimulate the other into special activity least, into an apparent hypertrophy). 3. The parathy are essential to life, and when lost, are soon followe death, with previous intense symptoms of a neurotic a toxication, which can not be averted by the thyroid i even if practically intact. 4. The loss of the thyroid i lowed by chronic trophic and metabolic disturbances, are not necessarily fatal, and which in general follow the of cretinism, myxedema and chronic cachexia strumipriva man. While the function of the parathyroid strongly suggests its action in an antitoxic manner, there is reason to believe that in the case of the thyroid a metabolic physiologic secretion is produced, although it is possible that in a limited sense here, too, an antitoxic action is associated. 5. It seems probable that the active product of the thyroid is one of the iodin-organic compounds that have been isolated from it, probably the thyroglobin of Oswald. 6. There is suggestive evidence that, in addition to the indefinite relation believed to exist functionally between the thyroid and parathyroids, there is also a close relation held to the thyroid by the hypophysis cerebri, which may have some degree of compensatory ability. 7. In addition to the foregoing, the thyroid also is concerned in the functions of growth; is involved especially in nitrogenous metabolism, and has some indefinite but real influence on the development and efficiency of the generative apparatus.

Etiology of Diseases of Thyroid Gland.

Dr. Theo. J. Elterich, Allegheny, classified diseases of the thyroid under the captions of congestion, inflammation (thyroiditis), neoplasms, simple hypertrophy (goiter), exophthalmic goiter, and cretinism and myxedema. In cretinism the administration of thyroid extract results in a return to growth and development approaching the normal. The therapeutic use of thyroid preparations has not been limited to diseases associated with disturbances of the thyroid gland, but has been extended to quite a large number of conditions that have no association with thyroidal perversion. Indications against the use of thyroid preparations are weakness of the cardiac action, albuminuria or glycosuria, tuberculous disease or a suspicion of grave renal or hepatic disease.

Symptomatology, Diagnosis and Medical Treatment of Exophthalmic Goiter.

Dr. Alfred Stengel, Philadelphia, said that diseases very different from each other are probably now all classed together as exophthalmic goiter, the only distinction now made being between exophthalmic goiter and pseudo-exophthalmic goiter. The latter is sometimes a case in which the system has not the proper resisting power to the thyroid poisoning, and often results from fright at the menstrual period. It is transitory in character, but has some of the symptoms of exophthalmic goiter. In different pathologic conditions there may be hyperthyroidism. The symptoms may be more or less pronounced, nervous symptoms, sometimes very severe, being frequently present. There are also circulatory symptoms, including palpitation, murmurs and sudden flushes of the skin; the thyroid symptom of enlargement of the gland; and the ocular symptoms, including protrusion of the eyes, retraction of the upper lid, a tendency to wink at long intervals, and the staring forward of the eyes. Sometimes there are gastrointestinal symptoms, such as nausea and vomiting, pain in the abdomen and intense emaciation. Exophthalmic goiter is more permanent. The enlargement of the gland is less fluctuating, and in cases that are not exophthalmic, some other symptom is usually more prominent than is the thyroidal condition.

It is impossible to say, in any given case, whether the remedies prescribed or the hygienic regulations attending the giving of the remedies has accomplished the cure. On the other hand, there are some facts leading one to expect useful results from certain kinds of treatment. Electricity and other agents reduce the vascularity of the gland and limit the secretion. Sedatives are used for the nervous manifestations, but they do not have much effect. Cold applications over the thyroid are used from time to time.

Specific treatment is aimed at the hypersecretion of the thyroid gland. The milk of thyroidectomized goats has been used in the treatment, with rather encouraging results, also a substance obtained from this milk.

The *x*-ray has also ben tried with satisfactory results, the gland becoming sclerotic and atrophied. A certain proportion of the cases that might be called exophthalmic goiter will, however, recover in any case; a certain number of the other cases can be reached by the older methods of treatment designed to reduce the circulation in the gland and the glandular activity; but a large proportion of cases can not be reached in such a way. One should then choose between electricity or the *x*-ray and some of the new forms of antithyroidin or the cytolytic serum. If these fail the aid of a surgeon should be invoked.

Relation Between the Thyroid and the Eyes.

Dr. John E. Weeks, New York, drew attention to the fact that diseases of the thyroid and parathyroid are, as yet, inseparable and that in considering the symptoms present in the eye due to thyroid disease, disease of the parathyroid must be induced. He considered the relation of the thyroid to the eye under the following headings:

(1) Conditions of the eye due to pressure of thyroid enlargements; (2) due to local metastasis of malignant thyroid tumors (very rare); (3) due to or associated with absence of thyroid gland; (4) due to compensatory enlargement of the hypophysis cerebri; (5) aggravated by or otherwise associated with goiter—Graves' disease, etc.; (6) due to some form of hyperthyresis.

Oration in Laryngology.

Dr. Ira J. Dunn, Erie, delivered this oration, the first delivered before the society in seven years. He reported the progress made in laryngology and in rhinology during this period.

The Value of Skiagraphy in the Surgery of the Nose.

Drs. W. G. B. Harland and H. K. Pancoast, Philadelphia, believe that *x*-ray pictures are of considerable value in giving a definite idea of the shape, size and location of the accessory sinuses, and in indicating the presence or absence of serious pathologic changes. While more accurate than transillumination, skiagraphy is also influenced by thickness of bone and similar factors, and the pictures should be studied in connection with other means of diagnosis. The secret of success in getting a good picture lies in the use of a hard tube and a diaphragm, with plenty of current and a short exposure. For lateral views the plate is held on the diseased side, the tube being distant about eighteen inches. Exposure should last from twenty-eight to thirty-three seconds, and thirty-two to forty-eight amperes of current should be used. For antero-posterior views the plate is held in front of and close to the face. Clothing is removed from the neck and the tube is held well down. The distance of the tube should be sixteen inches; exposure, ten to twenty seconds; and current, sixty amperes of the primary.

DISCUSSION.

Dr. Weidler asked whether, when the existence of pus is suspected in these sinuses, it is always found there at operation; or whether, just as in transillumination, the presence of pus may be suspected, and none be found on opening the cells. He also inquired whether Dr. Harland had worked out a table of percentage failures in such cases.

Dr. Pyfer said that the skiagraph is very valuable and suggestive, but that the darkening of the cells may mean only a difference in the technic. The plate may be in error, or the conditions may have changed. No one should operate or recommend an operation based on the skiagraphic findings.

Dr. Jackson said that any additional aid in making the diagnosis in these sinus-affections should be welcomed. He referred to the work in skiagraphy done by Dr. Caldwell of New York. The results were beautiful, the difference between the diseased side and the healthy side being very marked. To obtain such results one must not only be skilled in this work, but must also be thoroughly acquainted with the anatomy and pathology of the parts.

Dr. Risley said that skiagraphy probably would have proved useful in a number of his own cases, in which there was sinus-disease associated with protrusion of the eyeball. In two cases there was no apparent reason for suspecting frontal-sinus disease. The eyeball was pushed very far forward, there was violent pain, optic neuritis was present, and the vision was down to one-fifth. In one of these cases, operation disclosed an enormous pus-pocket back of the eyeball, the ethmoidal sinus practically being gone. Dr. Risley did not suspect the existence of such disease; it was only the condition of the middle turbinated, which he was about to amputate, that led him to discover the trouble with the ethmoidal sinus.

Intranasal Conditions Bearing on the Etiology of Ear Diseases.

Dr. G. Hudson Makuen, Philadelphia, classified the intranasal conditions giving rise to ear complications as follows: (1) Those causing disturbances of nasal respiration; (2) those attended by suppurative intranasal and sinus inflammation, and (3) any condition which by pressure or otherwise may give rise to reflex disturbances. The first class includes hypertrophic and atrophic rhinitis, intranasal growths, septal deflections and spurs, and naso-pharyngeal hypertrophies and tumors; and the damage to the ear is chiefly mechanical in its origin. The second class includes all catarrhal conditions of the nasal and accessory cavities; and the damage to the ear is usually by continuity of structure. The third class includes those conditions which give rise to irritation of the terminal nerves in the nasal and accessory cavities, and set up ear complications by so-called reflex action.

(To be continued.)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Typhoid Fever.

In an abstract in the *Pract. Med.* series Le Fevre states that the ideal diet for typhoid patients should be: 1, Liquid; 2, easily digested; 3, easily absorbed; 4, without solid residue; 5, not easily putrefiable; 6, should contain the requisite ingredients in normal proportions; 7, should be palatable. He states that milk alone does not fulfill these conditions or does so rather imperfectly. He recommends not more than two pints of milk daily, but adds carbohydrates, egg albumin, gelatin, especially in soups. He mentions the fact that gelatin obtained from soup stock is not only a nutriment, but is also a preventer of hemorrhages. This preparation, according to Harbin, serves three purposes: 1. It adds to the relish of various liquids. 2. It lessens nitrogenous waste from the system. 3. It prevents hemorrhage. He recommends a teaspoonful three times a day. Billings states that the effects of gelatin as a nutriment and as a hemostatic may be questioned. It is probable that gelatin which does not contain calcium chlorid will not increase the coagulation of the blood. It has not high nutritive value. In addition to other food preparations as a seasoning substance it may serve a good purpose. McCormick, in the same publication, gives the following outline of treatment of typhoid fever patients: The patient should first be given a bath for cleanliness, and an initial dose of calomel to move the bowels. Guaiacol is then recommended in emulsion or in capsules, in two-minim doses (.12) every two hours. This may be combined as follows:

℞.	Guaiacol	ʒi	4
	Eucalyptol	ʒii	8

M. Ft. capsules No. xxx. Sig.: One capsule every two hours.

If this capsule is not well borne, he recommends that guaiacol carbonate be substituted, given in three-grain doses every two hours.

The bowels should be kept thoroughly open at first with calomel, followed by magnesium sulphate, sodium sulphate or other laxatives similar to the following:

℞.	Podophyllin	gr. 1/8	008
	Massæ hydrargyri		
	Thymol, āā	gr. i	06

M. Ft. capsula No. i. Sig.: One such capsule every three hours until bowels move.

The colon should be well washed out once daily with a normal saline solution; if the temperature is 102.5 F. or higher this enema should be given cold; if below that degree it should be given lukewarm. To relieve tympanites he recommends turpentine emulsion in five-minim doses (.30).

Highsmith advises the following to relieve tympanites.

℞.	Hydrarg. chlorid mitis		
	Pulv. ipecacuanhæ		
	Pulv. opii		
	Pilocarpinæ muriatis, āā	gr. i	06

M. Ft. chartulæ No. xx. Sig.: Take one every hour.

DIARRHEA.

O'Connor states that diarrhea is due to the patient being unable to digest milk, and beef tea also increases the tendency to diarrhea. When diarrhea is present barley water should be added or lime water, and, if necessary, peptonized milk with lime water should be given; beef tea should be stopped and mutton broth added in its stead. If the stools are offensive, small doses of calomel may be added.

CONSTIPATION.

This may be correctel by increasing the broths and reducing the milk.

HEMORRHAGE.

The stools should be constantly examined for evidences of blood. Sometimes sloughs may be found antecedent to the hemorrhages, when turpentine may be given and the diet regulated. When hemorrhage is present he recommends administration of opium and turpentine, a reduction of the stimulants as much as possible and the administration of calcium chlorid

Yeo states that in cases of hemorrhage the intestinal movements must be arrested and in some cases this inactivity must be prolonged for 14 days in order to avoid the danger of a recurrence, and then to produce a movement by an enema of olive oil. On the occurrence of hemorrhage he recommends the following enema:

℞.	Pulv. opii et ipecac.	gr. v	30
	Acidi tannici	gr. x	65
	Mucil. acaciæ	℥i	30

M. Sig.: This amount to be combined with one or two ounces of warm water, arrow-root water or a thin starch solution and introduced into the bowel through a long rectal tube (8 to 10 inches long). In case of children the amount of Dover's powder must be proportionately reduced.

By the mouth the following combination is recommended·

℞.	Acidi gallici	gr. lx	4
	Alcoholis	f℥i	30
	Solve et adde		
	Acidi sulphurici arom.	fʒi	4
	Glycerini	ʒiii	12
	Liq. opii sedatavi (B. P.)	m. xv	1
	Aquæ cinnamomi q. s. ad	f℥vi	180

M. Sig.: Two tablespoonfuls every hour for six doses and then every three hours.

HEADACHE.

For the relief of the headache which so constantly accompanies typhoid fever, O'Connor recommends antipyrin in moderate size doses or sodium salicylate with mustard applied locally to the nape of the neck. He speaks of severe headache as indicating a liability to hemorrhage.

McDowell, in the *Dublin Jour. of Med. Sciences*, recommends in the earlier stages of the disease that a mixture containing dilute hydrochloric acid be given, and as the disease progresses he advises the following combination:

℞.	Quin. sulphatis	ʒss	2
	Acidi citrici	fʒiiss	10
	Aquæ q. s. ad.	f℥iv	120

And:

℞.	Ammon. carb.	gr. lxxx	5
	Tinct. senegæ	fʒiiss	10
	Sodii bicarb.	ʒiiss	10
	Tinct. digitalis	gtt. lxxx	5
	Aquæ q. s. ad	f℥vi	180

M. Sig.: Two teaspoonfuls combined with one-half teaspoonful of the alkaline mixture and half a teaspoonful of water in effervescence every three or four hours.

If the patient's heart is weak and a cardiac tonic is indicated, the following combination is recommended:

R. Tinct. strophanthi	fʒi	4	
Liq. strychniæ (1 per cent.)	fʒss	2	
Aquæ dest. q. s. ad	f℥iii	90	

M. Sig.: One teaspoonful as necessary.

To relieve the severe headache and the pains throughout the body the following combination is recommended by McDowell as a very efficient one:

R. Sodii salicylatis			
Kalii nitratis, āā	gr. x		65
Tinct. gelsemii	m. v		30
Aquæ q. s. ad	f℥ss	15	

M. Sig.: To be taken at one dose.

To check hemorrhage the following combination is recommended:

R. Tinct. camph. co	fʒss	2	
Acidi sulph. arom	m. x-xx		65-1.20
Spts. chloroformi	m. x		65
Syr. zingiberis	fʒi	4	
Decoct. hematoxyli q. s. ad	f℥ss	15	

M. Sig.: This amount to be taken at one dose and repeated after every bowel movement, diminishing the amount as soon as the hemorrhage seems to be under control.

To relieve the persistent vomiting he recommends a mustard leaf to the epigastrium and the following combination in half-ounce doses every four hours:

R. Bismuthi subnitratis	gr. viiss		50
Potassii nitratis	gr. ii		12
Liq. morph. hydrochlor. (1 p. c.)	m. viiss		50
Acidi hydrocyan dil	m. iiss		15
Pulv. tragacanthæ co.	gr. viii		50
Aquæ q. s. ad	f℥	15	

M. Sig.: To be taken at one dose.

The first dose should be preceded by half a teaspoonful of dilute hydrochloric acid. In case of failure he advises nutritive enemata, administering the mixture at intervals to test the irritability of the stomach.

Diarrhea is checked, according to McDowell, by stopping all nitrogenous foods, peptonizing all milk and administering one of the following combinations:

R. Tinct. camph. co.			
Acidi sulph. arom.	fʒss	2	
Spts. chloroformi.	m. xv	1	
Aquæ q. s. ad	m. x		65
	f℥ss	15	

M. Sig.: To be taken at one dose and repeated as necessary. Or:

R. Tinct. camph. co.			
Sodii bicarb.	fʒss	2	
Pulv. cretæ co	gr. v		30
Tinct. opii	gr. xx	1	20
Spts. chloroformi	m. v		30
Sodii salicylatis	m. x		65
Pulv. tragacanthæ co., āā			
Aquæ q. s. ad	gr. x		65
	f℥i	30	

M. Sig.: At one dose.

Moore regards the salicylate of quinin as superior to salol or any other intestinal antiseptic.

Turpentine is regarded by some authorities as the best general remedy in typhoid fever. It may be given in capsules in from 5 to 10-minim doses (.30-.65) or combined as follows:

R. Spts. terebinthinæ			
Spts. etheris nitrosi			
Spts. chloroformi, āā			
Syrupi amygdalæ q. s. ad	fʒi	4	
	f℥iii	90	

M. Sig.: Shake the bottle well and take one tablespoonful at a dose. Or:

R. Spts. terebinthinæ			
Tinct. lavendulæ co., āā			
Sacchari	fʒiss	6	
Pulv. acaciæ	ʒiss	6	
Aquæ q. s. ad	ʒii	8	
	f℥iii	90	

M. Sig.: Two teaspoonfuls every three or four hours.

NERVOUS SYMPTOMS.

Nervous symptoms are best treated by hydrotherapy, such as the ice pack or ice cap. The following combination may have to be employed to allay the nervous manifestations:

R. Strontii bromidi			
Sodii bromidi, āā	ʒvi	24	
Aquæ menth. pip. q. s. ad	f℥iii	90	

M. Sig.: One tablespoonful every three hours in water. Or:

R. Ext. opii	gr. iii		20
Asafetidæ	ʒss	2	
Ext. hyoscyami	gr. iii		20
Olei theobrom. q. s.			

M. Ft. suppos. No. vi. Sig.: One suppository every four hours.

Medicolegal

Rights of State Boards to Revoke Licenses.

The Supreme Court of Indiana holds, in Spurgeon and others vs. Rhodes, that it was error to grant a temporary injunction, on the application of the latter-named party, restraining the members of the State Board of Medical Registration and Examination from proceeding to hear and determine charges of "gross immorality" pending against him before said board and from revoking his license to practice medicine. It says, among other things, that the allegation in the complaint to the effect that a certain-named woman was employed to procure evidence in regard to his character was not denied, but this alone would not authorize the granting of a temporary injunction. The gist of the complaint was that the defendants had prejudged his case and had intended to revoke his license without any evidence and without giving him a hearing. The affidavits of five members of the board and their attorneys denied the charge, and said in effect that they intended to and would give him a fair and impartial hearing, and would determine the charges according to the evidence. This was all that he was entitled to demand. The fact that the woman mentioned was not in the state and could not be compelled to attend the hearing of the charges, or that the board would try the charges without her presence or testimony, furnished no ground for enjoining the board from hearing and determining the truth of the charges.

It was insisted that the temporary injunction was properly granted for the reason that section 7322 of Burns' Annotated Statutes of Indiana of 1901, under which the charges in question were presented to the board, so far as it attempted to confer on the board the power to try complainant and determine whether or not he was guilty or not of the gross immorality charged, and to revoke or refuse to revoke his license therefore, was wholly unconstitutional and void, in that it attempted to confer on the board such judicial power; that it was in violation of the fifth amendment of the Constitution of the United States, which provides that "no person shall be held to answer for a capital or other infamous crime unless on a presentment or indictment by a grand jury," and of the sixth amendment, which provides that "in all criminal prosecutions the accused shall enjoy the right . . . to have compulsory process for obtaining witnesses in his favor"; and that it violated the provision of said Constitution that "the trial of all crimes except in cases of impeachment shall be by jury." But the court says that these provisions apply only to proceedings and prosecutions in the courts of the United States and laws enacted by Congress; not to laws enacted by the legislatures of the states.

Statutes prescribing the qualifications of practitioners of medicine and surgery, and otherwise regulating the practice of those professions have been uniformly upheld by the courts as a valid exercise of the police power of the states, infringing no provisions of either federal or state constitutions. Statutes containing a provision like the one in question here, authorizing the board to revoke a license when the holder has been guilty of a felony or of gross immorality, have been held not to violate any provision of the federal or state constitutions, and it has been held that the granting or refusing to grant a license to practice medicine, or the revocation thereof by the board, is not the exercise of judicial power.

Physician Can Not Recover for Street Railway's Damage.

The Supreme Judicial Court of Maine says, in the case of Parsons vs. the Waterville & Oakland Street Railway, an action brought by a physician, that the fact that the plaintiff was hindered, delayed, and inconvenienced, and people desiring to consult him professionally were kept away, because of having to cross the defendant's track, would not give him a right of action against the defendant for a lawful use of the public way. The use of a street by a street railroad is a public servitude imposing no additional burden on the abutter.

Exhibiting Person With Explanations by Physician.

The Kansas City Court of Appeals says, in the personal injury case of Houston vs. Chicago, Rock Island & Pacific Railway Co., where the plaintiff was thrown down, striking his back on an iron coupling, that he was permitted, during the trial, to remove his clothing from the part of his body said to be affected by the injury while a physician stated where the nerve or nerves were located and the course of their location. The court does not discover any error in so doing, or any harm which could result to the defendant therefrom.

Son Not Necessarily Employed—Power of Local Surgeon.

The Court of Civil Appeals of Texas says, in Galveston, Harrisburg and San Antonio Railway Co. vs. Allen, brought by two physicians, father and son, to recover for medical services, that, while it may be that "necessity knows no law," it is certain that the law knows no necessity for a young physician being regarded as employed in a case of surgery because of the employment of his father. It also says that it can no more be said that it is within the scope of the apparent authority of a local surgeon of a railway to employ another surgeon to do his duty than it can be said that it is in the apparent scope of a station agent's authority to employ another man as a station agent to perform the duties intrusted him.

Contagious Disease Hospital Not Deemed a Nuisance.

The Court of Chancery of New Jersey says, in the case of State, on the relation of the Board of Health of Hamilton Township, vs. the Inhabitants of the City of Trenton, that a building used as a hospital for the treatment of diseases contagious and infectious in their nature is not per se a nuisance, and the erection and use of such a building will not be restrained simply because there is an apprehension that it may result in being a nuisance; but the court must be satisfied that there is a well-grounded apprehension.

Waiver of Privilege Under Statute—Cross-Examination.

The Supreme Court of Idaho says, in the case of Trull vs. the Modern Woodmen of America, that section 5958 of the Revised Statutes of that state of 1887 contains the following provision: "There are particular relations in which it is the policy of the law to encourage confidence and to preserve it inviolate; therefore, a person can not be examined as a witness in the following cases: . . . 4. A physician or surgeon can not, without the consent of his patient, be examined in a civil action as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient." This provision of the Idaho statute is to be found in the statutes of many of the states, and especially in California, New York, and Missouri. It has been uniformly held that such a statutory provision disqualifies a physician from testifying concerning any facts learned by him or disclosures made to him in the course of his professional treatment of or attendance on a patient. It has also been held that the privilege accorded the patient by such a statute is a personal privilege and can not be waived for him by any other person, and that the death of the patient makes a waiver impossible, and that the physician can never thereafter be permitted to testify concerning any matter touching his professional employment during the life of the patient. On this point, however, there is great diversity of opinion.

More particularly, the court holds in this case that, where, in an application for life insurance the applicant stipulates and agrees that he waives all provisions of law preventing a physician from testifying as to any information acquired by him while attending his patient or rendering him incompetent as a witness as provided in section 5958 above quoted, such waiver is valid and entitles the beneficiary named in the policy, as well as the insurer, in an action on a policy issued on such application, to call and examine the physician who attended the insured during his last sickness, and have him answer questions which, but for such waiver would be regarded as privileged communications that the witness could not disclose. Since the statute authorizes the patient to waive the privilege of secrecy imposed on his physician, and does not fix any specific time at which such waiver can or must be made, no reason is discovered why the waiver may not equally as well be made by contract and in advance of the relation of physician and patient arising as at the time of the trial. As to whether or not the privilege of secrecy granted by statute is a personal privilege attaching only to the person of the patient or can be waived by his heir or legal representative is a question left, so far as this court is concerned, undecided.

The court finds no error in a physician being permitted to be asked on cross-examination the question: "If a man died of the disease supposed to be smallpox, and the man who nursed him all that time had never been vaccinated, and did not take the smallpox at all from the patient, would you think it smallpox?" The rule, it says, is liberal in allowing a broad range of inquiry on cross-examination, and this rule is especially and particularly applicable when it comes to the cross-examination of that class of witnesses commonly called "experts."

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

September 22.

1 *Obstruction of the Common Bile Duct. J. F. Erdmann, New York.
2 *Lupulin in the Treatment of Gastrointestinal Diseases. H. Stern, New York.
3 Some of the Factors that Predispose to Phthisis. L. P. Barbour, Boulder, Colo.
4 Tuberculous Peritonitis. J. B. Boucher, Hartford, Conn.
5 *An Urgent Plea for the Use of Larger Doses of Antitetanic Serum for Lockjaw. R. Engelmann, Chicago.
6 *Dipsomania. C. J. Douglas, Boston.

1. **Obstruction of Common Bile Duct.**—Erdmann says that when all medical aid has been given without result, or if the symptoms are so urgent as to demand immediate surgical interference, the condition narrows itself to a question of surgical technic and after treatment. In exposing the duct Erdmann makes the incision over the right rectus muscle, splitting the fibers in the middle and internal, or middle and external thirds, for a distance sufficiently long to explore the duct. If the stone is located or adhesions demand it, the incision is rapidly enlarged to give ample working room. After the stone is removed, a fish-tail rubber tube, with from one to three openings, and from 10 to 12 inches long, is passed into the duct in its proximal direction for its lower three-quarters of an inch, sufficiently to bury the apertures only. The tube is held in place by a suture of chromic catgut.

2. **Lupulin in Gastrointestinal Diseases.**—Stern has found lupulin of special value in the functional disturbances of the stomach, in sensory as well as motor and secretory neuroses, and in neurasthenia gastrica. Lupulin may also be employed with advantage in diseases of the stomach, with an anatomic basis. As in gastric diseases, so in relation to the intestines, lupulin is particularly useful in the treatment of neuroses and functional disorders. In intestinal diseases with an anatomic basis, lupulin is often a symptomatic and sometimes a curative remedy. Stern claims that the use of this drug for protracted periods is never followed by undesirable after effects, which are so common with many remedies employed for similar purposes. He thinks that it is probable that enteric fever, as well as dysentery, will be favorably influenced by it.

5. **Use of Larger Doses of Antitetanic Serum.**—Engelmann believes that the ineffectiveness of antitetanic serum in cases of tetanus is due to insufficient doses. In one case, the his-

tory of which she reports, she administered the serum by both intraspinal and subcutaneous injections to the amount of from 60 c.c. to 80 c.c. daily to begin with, the total amount given being 650 c.c. subdurally, and 45 c.c. directly into the wound. After five days of this treatment the man was comfortable, with flaccid muscles and less rigid jaw. Recovery took place in four weeks and at the end of six weeks the patient was back at work.

6. Dipsomania.—Douglas defines dipsomania as an abnormal demand of the nervous system, either constant or periodic, for the drug action of alcohol—a demand so strong that the patient takes the alcohol in spite of his earnest wish and effort to avoid it. Dipsomania partakes of the nature of both a neurosis and a psychosis, the predisposing cause being a nervous system that is peculiarly susceptible to the poisonous or intoxicating action of alcohol. Dipsomania is a curable disease and not a mere habit. The patient should be removed from home, with all its customary surroundings, and devote himself to the business of being cured. In the majority of cases Douglas administers some remedies hypodermically at stated hours. He usually prescribes alcoholic liquors during the first few days of treatment, gradually withdrawing them. Milk and raw eggs are probably the best nutriment. He finds that apomorphin is the most prompt and effective hypnotic.

Boston Medical and Surgical Journal.

September 20.

7 Two Cases of Lymphatic Leukemia. J. L. Whitney, Branford, Conn.
8 Trachoma. B. P. Croft, Greenfield, Mass.
9 *Winter Climate of Tucson, Arizona. I. W. Brewer, Fort Huachuca, Ariz.
10 *Removal of an Enormous Ovarian Tumor. W. A. Smith, Springfield, Mass.

9. Winter Climate in Tucson.—Brewer recommends residence in Tucson during the winter to consumptives. The town itself is all that can be desired for residence purposes, he states, both as to its surroundings and social advantages. The temperature from October to March is ideal. Only 6 per cent. of the days are cloudy, and rain falls on an average of only 19 days. There are occasional dust storms. Tucson is a desirable winter resort for persons in the early stages of tuberculosis, but not for advanced cases.

10. Enormous Ovarian Tumor.—The tumor removed by Smith weighed 192 pounds. The patient was 42 years of age and had been ill for two or three years. She had been under treatment by a quack for nearly two years, electricity being used in the treatment, but the tumor continued to increase in size. The cyst wall was adherent over the entire front of the abdomen, covering a space of about three square feet, extending to the diaphragm, and involving a portion of it. Beneath the liver was a mass the size of a child's head, consisting of several small cysts. The pedicle was about half an inch in diameter. The patient died 24 hours after the operation from general exhaustion and shock.

New York Medical Journal, New York.

September 22.

11 *Prostatectomy for Prostatic Hypertrophy. R. Guiteras, New York.
12 *Cholecystostomy, an Improved Technic. H. Crouse, El Paso, Texas.
13 *Small Frequent Meals in the Treatment of Certain Biliary Affections. C. Herrmann, New York.
14 Gunshot Wounds of the Spinal Cord. A Plea for Early Myelorrhaphy. (To be concluded.) I. S. Haynes, New York.
15 Surgical Anesthesia, as Produced by Narcotic Alkaloids, with Especial Reference to the Antiquity of the Method. W. W. Babcock, Philadelphia.
16 A Case Illustrating the Effect of Long Continued Pressure on the Interior of the Mastoid by a Fluid of Low Infectivity. J D Richards, New York.
17 Dangers That May Lurk in Ordinary Milk, and the Duty of the Physician to Educate the Public and the Authorities in the Necessity of a Pure Milk Supply. D. J. M. Miller, Philadelphia.
18 Danger of Weak Solutions of Carbolic Acid when Used in Surgical Dressings. A Plea for Restricting Their Sale. L. B. Meyer, New York.
19 Case of Angioneurotic Edema. H. Morgenbesser, New York.

11. Prostatectomy.—Guiteras reviews the improvements made in the operation of prostatectomy by American surgeons and devotes considerable space to discussing the relative merits of the perineal and suprapubic operations. He favors the latter, although he believes that certain prostates can be removed more easily and safely by the perineal route. He says that suprapubic prostatectomy holds the same relation to the perineal operation that abdominal hysterectomy does to the vaginal, in that it is a better surgical procedure; that the changing of the patient's position simplifies the different steps of the operation; and that in most cases suprapubic prostatectomy is preferable to the perineal on account of the ultimate operative results, the purposes for which the operation is performed.

12. Cholcystostomy.—As a substitute for Robson's methods, which he deems faulty, Crouse offers a surgical procedure for which he claims the following advantages: 1. It permits the delivery of the fundus of the gall bladder through the entire abdominal wall, unless the patient is inordinately fleshy. 2. Pericholecystitis frequently binds not alone the gall bladder into a constricted position, but drags on the S-curved cystic duct to the extent of at times inducing all the simulating symptoms of calculi and furthering their cystic development. The method above described removes such restrictions. straightens out the cystic duct, thus favoring more perfect drainage not alone of the cystic, but of common and hepatic ducts as well. 3. It liberates the gall bladder from the usual strain of respiratorily induced hepatic movements, fruitful sources of subsequent pains. 4. The gall bladder's new position does not lay the patient liable to hernial development between liver and gall bladder, owing to the usual anatomic restraint of mesocolon attachments of duodenal hepatic ligament and gastric position. 5. It permits surgical cleanliness, digital exploration and immediate drain of gall bladder. 6. A perfect approximation between gall bladder and parietal surfaces is permitted. 7. It permits all surgical steps to be made safely at one sitting, gives a thoroughness and completeness to the operation not experienced while following the Robson methods.

13. Treatment of Biliary Affections.—A member of his own family having had a biliary fistula during the last five years, Herrmann had an unusual opportunity of observing the effect which the ingestion of food had on the relative quantity of bile which flowed into the duodenum by way of the common bile duct, and the amount, which flowed into the cystic duct and out through the fistula. Several facts were noted. First, the amount of fistulous bile was greater during the night than during the day, in the proportion of about two to one. Second, when a meal was taken late at night there was very much less fistulous bile, the daily amount of bile secreted remaining approximately the same. These facts indicated that the ingestion of food had a decided effect on the amount of bile which passed into the duodenum. It was further noted that fruit and other substances which increased intestinal peristalsis, also diminished the amount of fistulous bile. Alcohol seemed to act unfavorably by increasing the amount which escaped. The regular habit of tea drinking gave a disagreeable odor to the bile. If the last meal is taken at 7 o'clock in the evening, at 11 o'clock it has usually passed entirely into the small intestine, and from that time until 7 o'clock the following morning the bile secreted is for the most part stored up in the gall bladder, or if there is a fistula, the greater part escapes through that opening. If a meal is taken at 11 or 12 o'clock, its digestion requires two or three hours; during this time bile flows into the duodenum, and so much less escapes through the fistula. During the day the intervals between meals are shorter, so that there is less bile stored in the gall bladder, and therefore less escapes through the fistula. By adding a small meal at night, Herrmann succeeded in reducing the amount of fistulous bile from 26 to 6 grams.

These results prompted him to employ a similar method in the treatment of catarhal jaundice. The result was a most gratifying one. The treatment consists in giving five or six small meals instead of the usual three daily, an extra one being introduced at 10 o'clock in the morning, at 4 o'clock in the afternoon, and at 11 o'clock at night. These small meals consist of milk, eggs, broth, crackers or bread. If the patient awakes during the night a glass of milk may be taken. The bowels are to be kept open by mild laxatives. A daily rectal injection of cold water is sometimes very efficacious. Light exercises, especially such as bring into play the diaphragm and the abdominal muscles, are helpful.

Lancet-Clinic, Cincinnati, Ohio.

September 22.

20 Some Atypical Cases of Syphilis. A. J. Markley, Cincinnati.
21 How May Interstate Reciprocity Be Best Accomplished? E. S. M'Kee, Cincinnati.

St. Louis Medical Review.

September 15.

22 *The Circulation Viewed from the Periphery. J. Barr, Liverpool, England.
23 Origin and Heredity of Matter. (To be continued.) J. Wright, New York.

September 22.

24 *Technic of Operations on the Central Nervous System. V. Horsley, London.
25 *Occasion of the Dedication of the New Medical Auditorium. G. Homan, St. Louis.
26 *The St. Louis Medical Society in Its Earlier Years. L. Atwood, Ferguson, Mo.
27 *The Medical Profession of St. Louis To-Day. W. B. Outten, St. Louis.
28 *Future of the Medical Profession of St. Louis. W. G. Moore, St. Louis.
29 Origin and Heredity of Matter. (To be continued). J. Wright, New York.

22, 24.—See The Journal, Sept. 1, 1906, page 706.

25, 26. 27, 28.—See The Journal, Sept. 29, 1906, pages 1045 and 1046.

Pennsylvania Medical Journal, Athens.

September.

30 *Extrauterine Pregnancy. C. P. Noble, Philadelphia.
31 *Clinical Value of Blood Cultures. D. L. Edsall, Philadelphia.
32 *Technic and the Results in the Excision of Cancer of the Head and Neck. G. Crile, Cleveland, Ohio.
33 The Message of the Orient. J. E. Pilcher, Carlisle.
34 Nursing and Care of Our Insane. G. H. Moore, Schuylkill Haven.
35 Clinical Study of Our Insane. G. H. Moore, Schuylkill Haven.
36 *Observations on Conservatism in Connection with Gonorrheal Diseases of Uterine Appendages Based on Records of 195 Patients. K. I. Sanes, Pittsburg.
37 Practical Value of Some Old Remedies—Scopolamin Hydrobromid. J. V. Shoemaker, Philadelphia.

30.—See The Journal, Dec. 16, 1905, page 1906.

31.—See The Journal, Oct. 28, 1905, page 1350.

32.—See The Journal, Nov. 4, 1905, page 1438.

36. Conservatism in Gonorrheal Diseases of Uterine Appendages.—Sanes makes a plea for the conservative treatment of gonorrheal diseases of the uterine appendages, basing his remarks on 195 cases studied by him. Of this number 160 patients, or 82 per cent., were found to be below 30 years of age. Ninety-eight, or 50 per cent., had never been pregnant. Twenty-three, or 11 per cent., had aborted but had no children; fifty-seven, or 29 per cent., had only one child each, making a total of 90 per cent. of the patients each of whom naturally would be anxious to preserve her reproductive function. Sanes states that cases of gonorrheal salpingitis are often cured spontaneously by expectant treatment, some recovering spontaneously even after they develop into pus tubes. He cited a number of instances in which pregnancy took place, followed by the birth of a living child. For a pyosalpinx in its early stages, with the gonococci still active, if an operation is necessary, a vaginal salpingotomy and drainage is, to his mind, the best operative procedure. Abdominal conservative operation at this stage is dangerous. A sterile hydrosalpinx demands a salpingostomy, vaginal or abdominal. For a single sterile pyosalpinx it has been his practice to perform a salpingectomy, vaginal or abdominal. In double sterile pyosalpinx, the patient being young and anxious to preserve her sexual functions, a vaginal salpingostomy with drainage in the better tube is performed. A chronic pyosalpinx of long standing could hardly be expected ever to resume its function if saved, but even in such a tube, Sanes says, conservatism (vaginal salpingotomy) is often of value as a life-saving measure in patients whose general condition does not permit a radical operation. A secondary operation may be necessary later, but not always. With properly applied and repeated pelvic packing we can obliterate the pus sacs by allowing connective tissue formation, and while the tube then is useless it is also harmless, and the patient is saved from the more radical operation. Should complete salpingectomy be absolutely necessary, the ovaries, or part of them, should be preserved for the purpose of menstruation and possible ovarian secretion. To save part of the ovary involved in tubo-ovarian abscesses is neither safe nor advisable. In cases of double tubo-ovarian abscesses, therefore, no conservatism whatever is possible; but in the 141 patients operated on Sanes found only 7, or 5 per cent., of double tubo-ovarian abscesses, leaving 94 per cent. of patients in whom an attempt should be made to save at least a part of one ovary.

The number of conservative operations performed by Sanes for gonorrheal diseases of adnexa is 72. All the patients were discharged from the hospital as cured, there being no deaths. The postoperative histories could be followed up only in 34 cases. Of these 34 patients 9, or 26 per cent., had a secondary operation, 4 following vaginal drainage and 5 following unilateral salpingo-oöphorectomy. In the 5 secondary operations that followed unilateral salpingo-oöphorectomy no pus was found in any one of them. Two were found to be hydrosalpinx, 2 were normal, 1 was a pachysalpingitis. Four ovarian cysts found in connection with the first 4 tubes necessitated the 4 secondary salpingo-oöphorectomies. Thirty-three, or 97 per cent., retained their menstrual function. One patient, or 3 per cent., lost it in spite of the conservative treatment of the ovaries.

Of the 25 patients not reoperated on, 7 show adnexa palpable though not tender; and of these 7, 3 complain of occasional pain in the region of the palpable tubes. Three, or 9 per cent., conceived; one three years after a unilateral salpingo-oöphorectomy came to the office with pregnancy of three months' standing. One after a salpingo-oöphorectomy seven years ago miscarried twice, and one, the most remarkable of all, gave birth to a healthy child without any complications after a right salpingo-oöphorectomy, left salpingectomy, and partial excision of the left ovary.

Northwest Medicine, Seattle, Wash.

September.

38 Diagnosis of Insanity by the General Practitioner and the Consequent Duties which Must Necessarily Devolve on Him. C. E. Doherty, New Westminster, B. C.
39 Movable Artificial Eye. E. A. Hall, Victoria, B. C.
40 Ulceration of the Stomach. R. C. Boyle, Vancouver, B. C.
41 *Phosphatic Calculi Following Suprapubic Prostatectomy. R. E. Walker, New Westminster, B. C.
42 *One Hundred and Seventy-Seven Cases of Typhoid Fever Treated in Alaska. E. M. Rininger, Seattle, Wash.
43 Acute Contagious Diseases of Childhood: Duration of Danger of Contagion and Methods of Disinfection. H. G. Lazelle, Seattle, Wash.
44 Sources of Infection and Manner of Contagion of Acute Contagious Diseases of Childhood. W. N. Hunt, Bellingham, Wash.

41. Phosphatic Calculi Following Suprapubic Prostatectomy.—In the case reported by Walker the bladder wound closed entirely in about six weeks, and the patient's condition was all that could be desired for about three months, when he began to notice that when urinating the urine would cease to flow suddenly and there was pain with pyuria. On examination with a sound a calculus could be felt. The lithotrite failing to crush the stone, the bladder was opened and two stones were removed. No cause for their formation was discovered.

42. Typhoid in Alaska.—During seven years of practice in Alaska Rininger treated 127 cases of typhoid. Of this number 13 occurred in females and 164 in males, the age ranging from 14 months to 66 years. The largest number of cases occurred in the third decade. Twelve patients had had the disease previously. Intestinal hemorrhage occurred in 10 cases. Fifteen patients developed venous thrombosis. In 12 cases the left leg was affected, in 2 cases the right, and in one case both legs were involved. Thrombosis of the left popliteal artery occurred in one case. This was followed by gangrene, necessitating amputation of the leg. Neuritis occurred in one case, affecting both feet. Severe nephritis occurred in one case, a man, aged 66 years. This patient died of uremic coma. Subacute osteomyelitis occurred in three cases, attacking the sixth rib at the costo-cartilaginous junction in each case. Orchitis and epididymitis developed in one case. Intestinal perforation occurred in three cases, two of which resulted fatally. There were four cases of relapse. No routine method of treatment was employed. There were only seven deaths in this series.

Archives of Otology, New Rochelle, N. Y.

August.

45 *Acute Purulent Otitis and Mastoiditis. Treated by Means of Artificially Induced Hyperemia, According to the Method of Bier. S. J. Kopetzky, New York.
46 Case of Brain Abscess Following Traumatism and Acute Mastoiditis. Case of Hysteria Simulating Brain Abscess After Operation for Secondary Mastoiditis. A. Wiener, New York.
47 *Treatment of Purulent Otitis by Congestive Hyperemia. W. Keppler, Bonn, Germany.
48 Simple and Radical Mastoid Operations Under Local Anesthesia. H. Neumann, Vienna.
49 Disturbances of Speech in Childhood. V. Hammerschlag, Vienna.
50 Objective Tinnitus. C. Friedmann.
51 Four Fatal Cases After Purulent Otitis. Hoelscher, Ulm, Germany.

45. **Bier's Hyperemic Treatment of Mastoiditis.**—Kopetzky summarizes his observations of the Bier method for the treatment of acute otitis media, either with or without mastoiditis, as follows: 1. If used early it will greatly increase the probabilities of curing the condition without resort to major operative measures. 2. In cases cured under its influence the reestablishment of ear function will occur quicker than under the usual line of treatment. 3. Its use by the inexperienced is absolutely dangerous. 4. Its employment should be limited to the young and the otherwise healthy. 5. Finally, when the indications are kept in mind and when properly and intelligently used, induced hyperemia will be found a measure destined, when its scope and limitations are better understood, to find a permanent place in otologic therapeutics.

47. **Congestive Hyperemia in Purulent Otitis.**—Kempler reports the excellent results obtained in the treatment of 10 cases by Bier's method and warmly recommends its employment.

Journal Missouri State Medical Association, St. Louis.

September.

52 Some Questions Concerning the Treatment of Uterine Fibromyomata. H. S. Crossen, St. Louis.
53 *Suprapubic Cystotomy as a Preliminary to, and as a Route for the Performance of a Considerable Number of Prostatectomies. W. T. Elam, St. Joseph.
54 Intestinal Autointoxication. J. B. Norman, California, Mo.
55 Etiology of Accessory Sinus Disease. F. C. Ewing, St. Louis.
56 Diagnosis of Inflammatory Diseases of the Accessory Sinuses of the Nose. G. Sluder, St. Louis.
57 Treatment of Diseases of the Accessory Sinuses. M. A. Goldstein, St. Louis.
58 Ocular Signs and Complications of Accessory Sinus Disease. J. Green, Jr., St. Louis.

53. **Suprapubic Cystotomy Preliminary to Prostatectomies.**—Elam does not claim that the suprapubic is the easier route or even the one of choice for the performance of the larger number of prostatectomies. In many cases, however, the immediate demand is for drainage and vesical rest, and Elam prefers the suprapubic route for this purpose. If conditions are favorable the prostatectomy can be performed at the same time, although he has found but few patients whose interests are not better safeguarded by deferring the prostatectomy until a later date, at which time it can be performed by the route which seems best adapted to the character of the growth. The plea in this paper is for conservatism in the effort to prolong life in the case of the advanced and extreme prostatic.

Interstate Medical Journal, St. Louis, Mo.

September.

59 *Relative Value of the Surgical Procedures Employed for the Relief of Paralyses Following Acute Anterior Poliomyelitis. N. Allison, St. Louis.
60 Case of Double Resection for the Correction of Protrusion of the Lower Jaw. V. P. Blair, St. Louis.
61 When Should We Operate in Appendicitis? R. Hill, St. Louis.
62 Urethrotomy for Ruptured Urethra. R. Harrison, London, England.
63 Angioma of the Upper Lid: Operation. J. W. Charles, St. Louis.

59. **Value of Surgical Procedures for Relief of Paralyses Following Acute Anterior Poliomyelitis.**—Allison says that in extreme forms of infantile paralysis, the wearing of apparatus and the use of crutches is necessary, that the upright position may be maintained. In extreme forms of infantile paralysis the wearing of heavy appliances may be materially lessened by the employment of operations designed to fix the joints. In cases in which there is good muscular power remaining in strong muscles, these muscles may be used to good advantage by transference of their tendons. Care should be taken that the insertion of these tendons is strong and permanent, and that the muscles pull to the best mechanical advantage. In certain cases tendon-transplantation may be supplemented to good advantage by arthrodesis. In slight forms of paralysis the grafting of nerves is a surgical procedure of recognized merit.

Journal of Nervous and Mental Disease, New York.

September.

64 *The Great Psychical Importance of Ear Disease. W. S. Bryant, New York.
65 Ear Affections and Mental Disturbances. E. Amberg, Detroit, Mich.
66 Question of Protopathic and Epicritic Sensibility and the Distribution of the Trigeminus Nerve (Third Branch). C. L. Dana, New York.

64. **Psychical Importance of Ear Disease.**—Bryant reports several cases of auditory hallucinations which are interesting because of their evident dependence on catarrhal conditions of the ears, as shown by the cessation of the hallucinations when the aural conditions were corrected. The evidence points to some connection between ear disease and hallucinations of hearing other than mere coincidence. Bryant thinks it is probable that hallucinations of hearing originate in subjective ear sensations in most cases, and that cure of the coincident ear disease cures or assists the convalescence from the psychoses in a notable number of cases. Some cases of insanity appear to be excited by ear disease and the convalescence of insane patients is delayed by the presence of ear disease. Unilateral hallucinations of hearing, he says, are unquestionably due to unilateral ear disease.

Ohio State Medical Journal, Columbus.

September 15.

67 Surgical Treatment of Intestinal Indigestion. E. Harlan, Cincinnati.
68 Skepticism in Medicine. S. P. Wise, Millersburg.
69 *Methods in the Diagnosis and Treatment of Prostatic Hypertrophy. J. H. Jacobson, Toledo.
70 Visual Results After Cataract Extraction. D. W. Green, Dayton.
71 The Anterior Capsule in the Extraction of Cataract. C. F. Clark, Columbus.
72 Some of the Minor Details Frequently Neglected in Cataract Extractions. R. D. Gibson, Youngstown.
73 Further Observations on the Pathology of General Paralysis of the Insane. J. D. O'Brien, Massillon, Ohio.
74 Typhoid Fever—Treatment and Prevention of Relapses. C. W. Hixson, Cambridge.

69. **Diagnosis of Prostatic Hypertrophy.**—Jacobson has found two methods of value in making a diagnosis of hypertrophy of the prostate. These are (1) cystostomy, and (2) bimanual examination with a suitable sound in the bladder and the finger in the rectum. He has modified his cystoscope by dividing the circumference of the circular hard rubber at the ocular end of the instrument into eight parts by eight lines, and one vertical line placed on the handle or electrical connection of the instrument, so that each of the eight lines of the ocular end are separately brought into alignment with the line on the handle, thus dividing the circumference equally. In order to be able to measure the urethral length as well as to determine the size of an intravesical enlargement, the shaft of the cystoscope, near the ocular end, is ruled in centimeters. He prefers the perineal route for operating.

The Canada Lancet, Toronto.

September.

75 *A New Operation for Extreme Cases of Septal Deflection, with Presentation of a Successful Result in an Adult Case. J. Price-Brown, Toronto.
76 Causes and Treatment of Sterility in the Male. A. Fletcher, Toronto.

75. **New Operation for Septal Deflection.**—To remove the antero-posterior tension Brown makes a cross cut completely through both mucous membranes and cartilage and extending beyond the other two cuts, converting the two straight lines into the letter H. The points to which he draws attention in reference to it are these: First, that as the curvature of the cartilage from above downward gives it a greater width than it would occupy if it were upright in its normal position, the two longitudinal cuts should be so managed as to remove two long slips of the septal cartilage; and at the same time be made at an oblique angle, so that the cut edges can slide over each other. Second, that the cross cut of the H should be very decidedly oblique, cutting through both mucous membranes and cartilage with knife or chisel, so that in replacing the segments the posterior central segment of the septum will slide forward over its fellow and the anterior one backward. It

matters little how these cuts are made if the principle on which they are founded is carried out. The long strips of cartilage might be removed either by drill or swivel saw, or knife or ordinary saw of unusual thickness, or any improved instrument specially constructed for the purpose. The cross cut can be made by either chisel or knife. The immediate result of the combined cuts when made completely through both mucous membranes and cartilage is that all tension is removed, that two rectangular flaps are made by the H incision, the basic blood supply of each being retained, and that they can be pressed with ease into the normal position, their edges sliding over each other. The pieces will bend easily and, sliding over each other, are readily adjusted; they are retained in position by the use of the invaluable rubber splint, a single one on the convex side being the only one needed.

Columbus Medical Journal.

September.

77 *Value of the Leucocyte Count in Cases of Appendicitis. R. P. Daniells, Toledo.
78 Present Position of Radiation in Treatment. G. Sichel.
79 Meeting of American Medical Association and Impressions of Historic Boston. C. P. King, Newark.

77. **Leucocyte Count in Appendicitis.**—Daniells made careful blood counts in 120 cases, all of which came to operation and were proved to be cases of uncomplicated appendicitis. He found that in the beginning of an acute attack of appendicitis there is, as a rule, a leucocytosis, but that in mild cases no leucocytosis may be present. A rapidly increasing leucocytosis in these acute cases means that the inflammation is increasing and extending, and this is true even when other symptoms show no change or perhaps a slight improvement. When cases do not come under observation until late in the attack and an abscess is already present, there is usually an increase in the white blood cells, but this is dependent on the amount of peristalsis which is allowed to take place.

Archives of Pediatrics, New York.

September.

80 *Weights of the Viscera in Infancy and Childhood, with Special Reference to the Weight of the Thymus Gland. D. Bovaird, Jr., and M. Nicoll, Jr., New York.
81 The Blood Changes in Mumps. I. S. Wile, New York.
82 Does the Bacterial Content of City Milk Influence the Infantile Death Rate? G. W. Goler, Rochester, N. Y.
83 Nervous Children. A. Church, Chicago.

80. **Weights of Viscera in Infancy and Childhood.**—A study of the average weights of the viscera in infants and children up to the age of five years showed Bovaird and Nicoll that there is a constant relation between the weights of the more important viscera, thus: The weight of the liver will average seven times that of the heart. The weight of the spleen will average one-tenth that of the liver. The weight of the kidney will average one-ninth that of the liver. The weight of the thymus gland as commonly given is excessive, owing to the acceptance of pathologic glands as the standard for normal conditions. The average weight of the thymus at autopsy is approximately 6 grams. There is no evidence of a growth of the thymus after birth under ordinary conditions, but under special conditions the gland does grow and even hypertrophy enormously.

Virginia Medical Semi-Monthly, Richmond.

September 7.

84 Subpectoral Abscess. J. H. Musser Philadelphia.
85 The Treatment of Acute Nephritis. G. F. Butler, Chicago.
86 Antitoxin in Diphtheria. C. T. St. Clair, Tazewell, Va.
87 *Some New Methods in Skin Grafting. J. E. Cannaday, Paint Creek, W. Va.
88 Analysis of Stomach Contents. E. L. Kellogg, New York.
89 Epistaxis. J. Elliot, Washington, D. C.
90 Conservative Operations on the Ovaries. J. M. Baldy, Philadelphia.

87. **New Methods in Skin Grafting.**—All the practical points in this communication are covered in an article by Dr. Cannaday on the same subject, which appeared in The Journal, June 2, 1906.

University of Pennsylvania Medical Bulletin, Philadelphia.

September.

91 Premature Separation of the Placenta from Its Normal Position. W. R. Nicholson, Philadelphia.
92 Bone Cysts. G. P. Müller, Philadelphia.
93 *Studies on Phagocytosis. D. H. Bergey, Philadelphia.

93. **Phagocytosis.**—This article appeared in The Journal, Aug. 25, 1906, page 580.

Cleveland Medical Journal.

September.

94 Factors in the Surgical Physiology of the Circulation G. Crile, Cleveland.
95 *Treatment of Typhoid. J. Phillips, Cleveland.
96 Management of Prolonged First Stage of Labor. F. S. Clark Cleveland.
97 *Several Thousand Convulsions in Four-weeks' Old Infant. A. F. Furrer, Cleveland.
98 Case of Malignant Endocarditis. G. S. Smith, Cleveland.

95. **Treatment of Typhoid.**—Phillips outlines the treatment that was employed in 1,070 cases of typhoid admitted to the Lakeside Hospital in Cleveland. The mortality in these cases was 7.9 per cent. The treatment does not differ from that usually employed. The patient is kept on a soft diet for four days, consisting of softened milk toast, eggs, junket, custard and well-cooked rice. The diet is then increased by the gradual addition of cereals, crackers, scraped beef, creamed chicken, bread and butter, and milk pudding. Milk is given between meals and in the evening. The convalescent diet is the same, with the addition of more meat, fish, potatoes, tea and coffee. The tub bath is used. Cholecystitis was present in 12 cases; intestinal hemorrhage occurred in 63 cases; perforation of the intestine in 29 cases; phlebitis in 42 cases; otitis media in 31 cases; cystitis in 9 cases and pyelitis in 2 cases.

97. **Convulsions in an Infant.**—Furrer reports the case of an infant four weeks old that had general convulsions, coming on about every five minutes day and night, since the fourth day after birth. No cause for the convulsions could be discovered. The infant was well developed, and in the best of health. Under treatment with castor oil and sodium bromid, one grain every three hours, and mercurial ointment, the baby recovered.

St. Paul Medical Journal.

September.

99 Prophylaxis and Treatment of Prostitution. D. Lewis, Chicago.
100 Mastoiditis. J. G. Parsons, Brookings, S. D.
101 Recent Investigation and Complications of Diphtheria. W. R Ramsey, St. Paul.
102 Scarlet Fever. H. T. Pippert, St. Paul.
103 Senile Bronchopneumonia. T. G. Stephens, Sidney, Iowa.

Annals of Gynecology and Pediatry, Boston.

September.

104 Pelvic Abscess and Its Treatment. N. MacPhater, New Yo
105 Relation of the Major Gynecologic Postoperative Cures to Country Doctor. H. Hamilton, Harrisburg, Pa.

Kentucky Medical Journal, Louisville.

September.

106 Appendicitis. J. H. Peak, Louisville.
107 Scarlet Fever. E. N. Hall, Woodburn.
108 The Use of Forceps. O. H. Reynolds, Frankfort.
109 Two Cases of Suppurative Synovitis of the Knee Joint. A. Crittenden, Ferguson.
110 Blastomycosis. W. R. Burr, Auburn.
111 Fracture of the Clavicle. C. H. Linn, Kuttawa.
112 Relation of the Physician to Sanitation and Hygiene. H. Sights, Paducah.
113 Treatment of Pneumonia. A. E. Gardner, Morgantown.
114 Postpartum Hemorrhage. M. H. Sutherland, Harrodsburg.
115 Treatment of Acquired Syphilis. C. P. Price, Harrodsburg.

Journal of the Michigan State Medical Society, Detroit.

September.

116 Cesarean Section for Placenta Prævia Centralis. J. G. Lyn Ann Arbor.
117 Fatal Case of Eclampsia, After the Delivery of Twins, I marks on the Etiology and Pathology of the Disease. C. Parnall, Jackson.
118 Iodized Catgut. W. T. Dodge, Big Rapids.
119 Systemic Disturbances Secondary to Pathologic Conditions the Nose. J. E. Gleason, Detroit.
120 Treatment of Tetanus. W. H. Hutchings, Detroit.

Journal of the Minnesota State Medical Association and tl Northwestern Lancet, Minneapolis.

September 1.

121 Pneumonia: Its Present Day Status and Treatment. S. I Boyer, Duluth.
122 Pulmonary Consumption. L. C. Weeks, Detroit, Minn.
123 State Hospitals for the Insane, their Relation to the Publi E. C. Ericson, Elk Point, S. D.
124 Surgery of the Gall Bladder and Bile Ducts. J. T. Roger St. Paul.

Buffalo Medical Journal.

September.

125 Etiology of Functional Nervous Diseases. J. W. Putnan Buffalo.

Journal of the Medical Society of New Jersey, Newark.

September.

126 Value of Tartar Emetic in the Treatment of Traumatic Tetanus and Cerebrospinal Meningitis. D. St. John, Hackensack, N. J.
127 Etiology of Rachitis, Scorbutus and Cretinism. A. A. Strasser, Arlington, N. J.
128 Diarrhea in Infancy and Early Life. I. H. Hance, Lakewood, N. J.

Journal of the Outdoor Life, Saranac Lake, N. Y.

September.

129 Why Rest Is So Essential in the Treatment of Tuberculosis. D. R. Lyman, Wallingford, Conn.
130 Taking the Open Air Cure in Switzerland. N. McL. Carter.
131 Hints and Helps in the Choice of an Occupation. R. A. Harris, Pleasant Grove, Tex.
132 Heated Table for Winter Work Out-of-Doors. L. R. Perkins, Keytesville, Mo
133 Pennsylvania's Chance to Provide Outdoor Work for Thousands of Convalescents. J. T. Rothrock, Mont Alto, Pa.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

September 8.

1 *President's Address, British Medical Association. R. A. Reeve.
2 Teaching of Anatomy in Universities and Medical Schools. A. Robinson.
3 Dangers to Otology. J. D. Grant.
4 Relation of Gynecology to the Work of the General Practitioner. A. H. F. Barbour.
5 Chairman's Address, Section of Ophthalmology. R. M. Gunn.
6 Proteid Nomenclature. W. D. Halliburton.
7 Chairman's Address, Section of Surgery. H. C. Cameron.
8 An Imperial Pharmacopeia. D. MacAlister.
9 Annual General Meeting, British Medical Association.
10 Report of Work of Sections, British Medical Association.
11 *Ovarian Pregnancy. J. T. Hewetson and J. Lloyd.

1.—See abstract in THE JOURNAL, Sept. 1, 1906, page 705.

11. **Ovarian Pregnancy.**—Hewetson and Lloyd report a case of ectopic gestation which they are satisfied arose within the substance of the ovary. The patient, aged 35, was referred for operation for a supposed subacute appendicitis. Since her last pregnancy menstruation had been quite irregular up to a few weeks of her present illness. She was taken suddenly with severe pain in the lower abdomen, which was followed by symptoms of collapse. Under treatment she improved somewhat and on the following day menstruation began (having been delayed for two weeks) the flow containing many shreds and little pieces. This continued for seven days, the pains recurring from time to time and being most severe in the right lower quadrant of the abdomen. The woman vomited after every meal. On opening the peritoneal cavity about two pints of porter-like fluid escaped, and still more was mopped from the pelvis. A mass of firm clot as large as a fist was removed from the deepest part of the pelvic cavity, being bound by firmer fibrinous clot, which formed the walls of an almost perfect cavity. The uterus was larger than normal, but was otherwise healthy. The right Fallopian tube was normal from end to end; fimbriæ were free and unattached. The right ovary was enlarged, and formed part of the walls of the sac in which the blood clot lay. A ragged opening in its posterior surface toward the pelvic cavity was evidently the source of the bleeding. The ovary and tube were, therefore, tied off with silk close to the uterus and removed. The left ovary and tube were normal. They were not removed. The pelvis was cleaned up with dry sponges and the wound was closed. The patient made an easy recovery. Chorionic villi were found embedded in the fibrin lining of the cavity. These findings, the authors believe, justify them in concluding that this was a case of promary implantation of a fertilized ovum within the substance of the ovary, and that by gradual distension and thinning of the part nearest to the surface rupture of the sac followed with expulsion of the mole into the pouch of Douglas. The adjoining ovarian stroma was intensely vascular, suggesting an intervillous circulation.

The Lancet, London.

September 8.

12 The Evolution of Insanity. R. Jones.
13 *Epidemic Cerebrospinal Fever. J. L. Steven.
14 *The Submucous (or Window) Resection Operation for Correction of Deflections of the Nasal Septum. E. F. Potter.
15 Presence of the Bacillus Typhosus or a Closely Allied Organism in a Sample of Distilled Water Suspected to Have Caused Typhoid Fever. R. W. C. Pierce and J. C. Thresh.
16 The Therapeutic Action of the Iodids. J. Burnet.
17 *Three Cases of Twisted Pedicle. W. G. Sutcliffe.
18 A Presumed Case of Acute Yellow Atrophy of the Liver. W. C. Hayward.
19 Preliminary Note on a New Spirochete Found in a Mouse. A. Breinl and A. Kinghorn.
20 *Case of Intussusception, Illustrating the Fallacies and Dangers of the Inflation Treatment. J. L. Falconer.
20½ First Report of the Expedition to the Amazon, 1905. H. W. Thomas.

13. **Epidemic Cerebrospinal Fever.**—In a lecture on this subject Stevens reviews the clinical history of the disease and emphasizes its specific origin, the diagnosis of lumbar puncture and the frequency of the disease in sporadic form.

14. **Submucous Resection Operation.**—Potter endorses the value of this operation and its superiority over other operations for deflections of the nasal septum.

17. **Twisted Pedicle.**—The three cases reported by Sutcliffe occurred in females, aged 15, 21 and 48 years, respectively. In the first case the diagnosis of appendicitis was made, but at the operation the disturbance was found to have been caused by a thin-walled cystic tumor which sprang from the left broad ligament. The second case also was one of left broad ligament cyst, the pedicle of which was twisted on itself three times. The third case was one of right broad ligament cyst with the pedicle twisted into a knotted ropelike cord. There was also a dermoid tumor of the right broad ligament.

20. **Case of Intussusception.**—In the case reported by Falconer the tumor was made to disappear by water inflation, but reappeared after each treatment. The intussusception was of the ileocecal variety. Falconer states that when an acute intussusception has existed for 30 hours the patient should be subjected to rational and scientific surgery without delay.

Indian Medical Gazette, Calcutta.

July.

21 The Spread of Plague. S. Browning-Smith.
22 Natural History of Plague. A. F. Stevens.
23 How Plague Is Spread. E. F. G. Tucker.
24 Plague in the City of Madras. T. S. Ross.
25 How Does Plague Spread? A. M. Elliot.
26 Effects of Rat Extermination on the Incidence of Plague in a Selected Area in Azamgarh City. J. W. Walker.
27 How Plague Is Spread. C. A. Gill.
28 An Experimental Investigation as to the Potency of Various Disinfectants Against Rat Fleas. W. M. C. Hossack.
29 Rat Killing for Prevention of Plague. G. King.

August.

30 The Supply of Drinking Water in India and Its Connection with the Subsoil Water. A. W. Dawson.
31 Couching of the Lens, as Practiced by Native Practitioners in India. R. H. Elliot.
32 Extraction of Cataract in the Capsule. H. Smith.
33 Cataract Expression (Smith's Operation). F. P. Maynard.
34 Extraction of Cataract in the Capsule versus the Ordinary or Capsule Laceration Method. H. Gidney.

Journal of Tropical Medicine, London.

September 1.

35 The Bacillus of Hamilton Wright. Obtained from Two Cases of Acute Beriberi. L. S. Dudgeon.
36 Beriberi; Mouldy Rice; the Occurrence of Beriberi in the Sokor District. J. D. Gimlette.

Presse Médicale, Paris.

37 (XIV, No. 64.) *Sur la pénétration des poussières minérales et des graisses à travers les parois du tube digestif (penetration of mineral dust and fats through the walls of the digestive tract). P. Vansteenberghe and P. Sonneville.
38 Lean Diabetes as Sequel to Mumps.—Diabète maigre post-ourlien. Laignel-Lavastine.
39 Bromatologie clinique du pain (of bread). A. Martinet.
40 (No. 65.) A propos de l'appendicite. J. L. Faure.
41 Du tremblement palustre. Jourdran.
42 Traitement de la coqueluche par le chloroforme (whooping cough). H. de Rothschild.
43 Quelques points du traitement médical en gynécologie. A. Martinet.
44 (No. 66.) *L'ulcère peptique du jéjunum. A. Gosset.
45 Du promontoire du bassin (of pelvis). R. Robinson.
46 L'état actuel de la médication phosphatée. S. Posternak.
47 Success of Arsenic in Treatment of 8 Children with Whooping Cough.—Traitement de la coqueluche par l'arsenic. J. de Nittis.
48 (No. 67.) Study of Intoxication from Tobacco.—Sur quelques lésions de l'intoxication tabagique expérimentale. A. Gouget.
49 *Success with Sodium Bicarbonate in Cholera.—Traitement du choléra. A. Thébaud.
50 (No. 68.) Emploi du bromure de potassium dans l'épilepsie. J. and R. Voisin.
51 La flore microbienne de l'ulcère des pays chauds. Boucher.
52 *Le surmenage aigue (overwork). M. Champeaux.

37. **Passage of Mineral Dust Through the Walls of the Digestive Tract.**—This communication from Calmette's Pasteur

stricting band has been applied in 86 cases of furuncles, carbuncles, abscesses, defective consolidation after fracture, and postoperative suppuration. The results are said to have been brilliant in every instance.

75. **Passive Congestion in Treatment of Tuberculous Fistulæ.**—Gaugele has combined passive congestion with suction therapy in treatment of tuberculous fistulæ, with excellent results. In one case a weakly lad with three long rebellious fistulæ was promptly cured by the application of suction vessels. When a fistula healed over he examined if there were a trace of secretion below the new skin. If so, he punctured the new skin and applied the suction vessel with very weak suction. In this way he was able to keep the fistula clean, and it then rapidly healed.

79. **Exposure of Heart After Injury.**—Wilms recently had occasion to operate in a case of bullet wound of the heart. Two hours after the injury he sutured the holes, taking three stitches in each. Considerably more than a liter of blood was found in the chest, but the patient recovered without reaction. Wilms gained access to the heart through an intercostal incision without attempting to cut an extensive flap. It allowed ample access to the front and rear of the heart while the whole operation was so rapid, simple and free from hemorrhage, that he advocates an incision in the fourth or fifth interspace as the standard procedure in such cases.

Centralblatt f. Gynäkologie, Leipsic.

Last indexed, page 78.

81 (XXX, No. 18.) Ueber die Bossi'sche Dilatation bei vorzeitiger Losung der Placenta (premature detachment). R. Jolly.
82 *Erster Fall von späterer Geburt nach subkutaner Pubiotomie (first case of subsequent childbirth). K. Reifferscheid.
83 Fall von Gangraena phlegmonosa vulvae bei einer Schwangeren (in a pregnant woman). L. Goth.
84 (No. 22.) *Pelvioplastik. B. Credé (Dresden). Criticism in No. 30 by R. Klien.
85 Simplification of Pelvic Measurement.—Eine Vereinfachung der v. Bylicki'schen Beckenmessmethode. J. Faust.
86 *To Detect Fetal Heart Sounds Before End of First Half of Pregnancy.—Ein Handgriff zum leichteren Auffinden der kindlichen Herztöne vor Ende der ersten Schwangerschaftshälfte. M. Schwab.
87 *Ueber Röntgen-Bestrahlung der Ovarien in der Gravidität. O. O. Fellner and F. Neumann.
88 (No. 23.) *Ueber Lumbal-Punktion bei Eklampsie. J. Thies.
89 *Ueber Indikationen zum künstlichen Abort. G. Ahlfeld.
90 Vaginaler Sectio cesarea bei Retroflexio uteri gravidi cum Incarceratione. A. Bennecke.
91 (No. 24.) *To Enhance Resisting Powers of Peritoneum.—Resistenz-Erhöhung des Peritoneums gegen Infektion mittels Nuklein-Säure, eine prophylaktische Massnahme um die Morbidität und Mortalität nach der abdominalen Radikal-Operation des Gebärmutterkrebses herabzusetzen. W. Hannes.
92 *Zur Aetiologie und Therapie der Eklampsie im Puerperium. W. Liepmann.

82. **Childbirth After Pubiotomy.**—The patient with extremely contracted pelvis on whom Reifferscheid first performed extramedian symphyseotomy or pubiotomy, was recently delivered of another living child without the necessity for further enlargement of the pelvis. A fibrous cicatrix had formed at the point of section, and this loosened during the pregnancy and stretched during delivery.

84. **Plastic Operation on Pelvis.**—Credé aims to enlarge the pelvis permanently, not merely during delivery. He has worked out a technic on the cadaver and has recently applied it with gratifying success in a clinical case. He advocates performing the operation at the beginning of pregnancy or even before conception, in case of a very contracted pelvis, or when much depends on bringing healthy children into the world, even if the pelvis is not very much deformed. His technic includes sawing the pubic bone at two points, the first section passing downward through the body and the second through the horizontal ramus. The part between is completely detached by a third, nearly horizontal, section slanting from the center of the first section to the obturator foramen. The part thus detached is transplanted forward between the halves of the severed body of the pubic bone, thus holding them permanently apart at a distance of 2 cm. The article is illustrated. In the case in which he operated to facilitate delivery the wound healed without reaction or temperature.

86. **To Detect Fetal Heart Sounds Early.**—Schwab advises pushing the contents of the uterus up, forcing them against the roof of the fundus. This he accomplishes by placin right hand at a right angle to the body, just above the physis, and pressing gently downward vertically and the ward toward the fundus. He then applies the stethosc the most bulging portion of the abdomen, a little abov umbilicus. The fetal heart sounds become distinctly a with this technic, even before the middle of the fourth m

87. **Roentgen Exposure of Ovaries During Pregnancy.**- researches on rabbits described demonstrate that Roe exposures of the ovaries induce degeneration of the ova arrest the growth of the fetus. The phenomena observed cate that the functional activity of the ovary, especiall internal secretion, is not without significance for the co ance of the pregnancy during its first half at least.

88. **Lumbar Puncture in Eclampsia.**—Thies states tl the 15 patients treated by lumbar puncture died, a m of over 42 per cent. The pressure of the cerebrospin was unusually high in all but one case. The prognosis to be better in the cases with lowest pressure. An effe the lumbar puncture was evident in only a few of th Profound coma was apparently relieved in some instanc

89. **Indications for Artificial Abortion.**—Ahlfeld urg eral practitioners to be careful about telling their that artificial interruption of the pregnancy is nec Careful study of the case and treatment in a hospital underlying trouble suggesting abortion may frequently r it unnecessary. In any event, he says, when referring patient to a specialist, write the particulars instead of t the patient what to ask for.

91. **To Enhance Resisting Powers of Peritoneum in C Operations.**—Hannes reports from Küstner's clinic that cases he injected 50 c.c. of a 2 per cent. solution of nucle in the form of sodium nucleiate, about 13 hours befo abdominal operation for carcinoma of the cervix. The re on the whole, were gratifying, and he is convinced that injections will prove a valuable aid in enhancing the resis of the peritoneum to infections. The reaction was al striking; the temperature rose one or two degrees C., w chill in three cases. Marked hyperleucocytosis was evide blood drawn from the lobe of the ear in nearly every He does not think that much can be anticipated from th jections when the resisting powers are at a low ebb. In of cachexia or existing infection it may prove possible to munize the patients by preliminary injection of killed tures of streptococci, according to Polano's technic. He is testing this, sometimes combining it with the nucleic injections.

92. **Treatment of Eclampsia.**—Liepmann ascribes eclam to retention in the liver of toxins generated in the plac The liver, for some reason, is unable to neutralize them. ing the lowering of the vitality by the birth process, unneutralized toxins pass into the circulation and, in ca a predisposition, affect the brain, kidneys or both, and in the syndrome of eclampsia. If the toxin injures princi the kidneys, then the symptoms will be scanty urine, albumin and casts. From 2,000 to 4,000 c.c. of physic salt solution should be injected, he states, with venesectio case of plethora, and three times a day a powder shoul given containing diuretin (theobromin sodium salicylat gm., and pulv. digitalis leaves and trit. camphor, each 0. If the toxin affects the heart, the pulse will be rapid an tering, and caffein and camphorated oil should be inject cutaneously. If the toxin affects the brain there will superficial respiration from paralysis of the respiratio edema of the lungs and convulsions. Treatment of of symptoms should include artificial respiration k days with half-hour intervals, and during the paus with cold water and cold packs. Narcotics should little as possible; the best, he states, is an enem chloral at a dose, with morphin only in case of agitation, 0.03 gm. at a dose. In his experience respiration and slapping with cold water have patients who were apparently moribund. The symptoms and treatment in two such cases are gi lated form

Dr. Robert Bells Library
C. M. C. Medical College